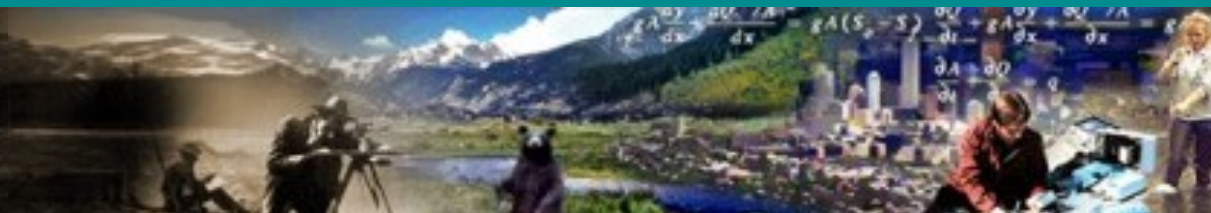




Serving Real-Time and Historical Water Data to the Public

The USGS National Water Information System: Design, Quality Assurance, and Uses

**Montana Hydrology Conference
Helena Montana, July 27, 2010
Dave Briar**



Topics:

- **NWIS / NWISWeb systems design**
 - Philosophy and architecture
- **Quality assurance**
 - Both data quality and system availability
- **Public and internal uses**
 - Nontraditional and automated access



NWIS / NWISWeb System Design:

- NWIS uses a data model optimized for acquisition, processing, and archiving of data
- NWISWeb aggregates the data and uses a data model optimized for efficient retrieval
- NWISWeb national architecture reflects history and USGS culture of local ownership / control

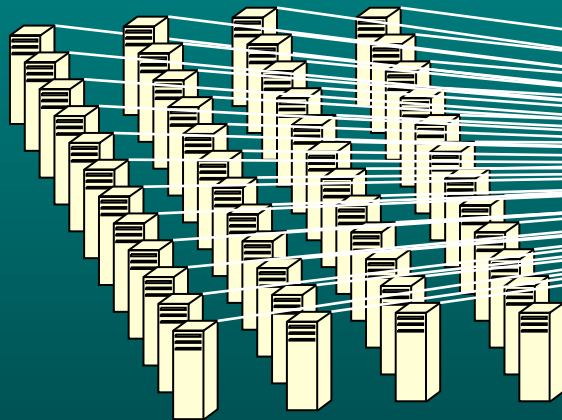


NWIS / NWISWeb System Design:

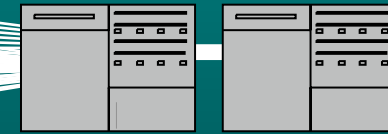
- NWIS uses a data model optimized for acquisition, processing, and archiving of data
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- **NWISWeb national architecture reflects history and USGS culture of local ownership / control**

Secure Repository → Public “View”

45 NWIS hosts



<http://waterdata.usgs.gov/>

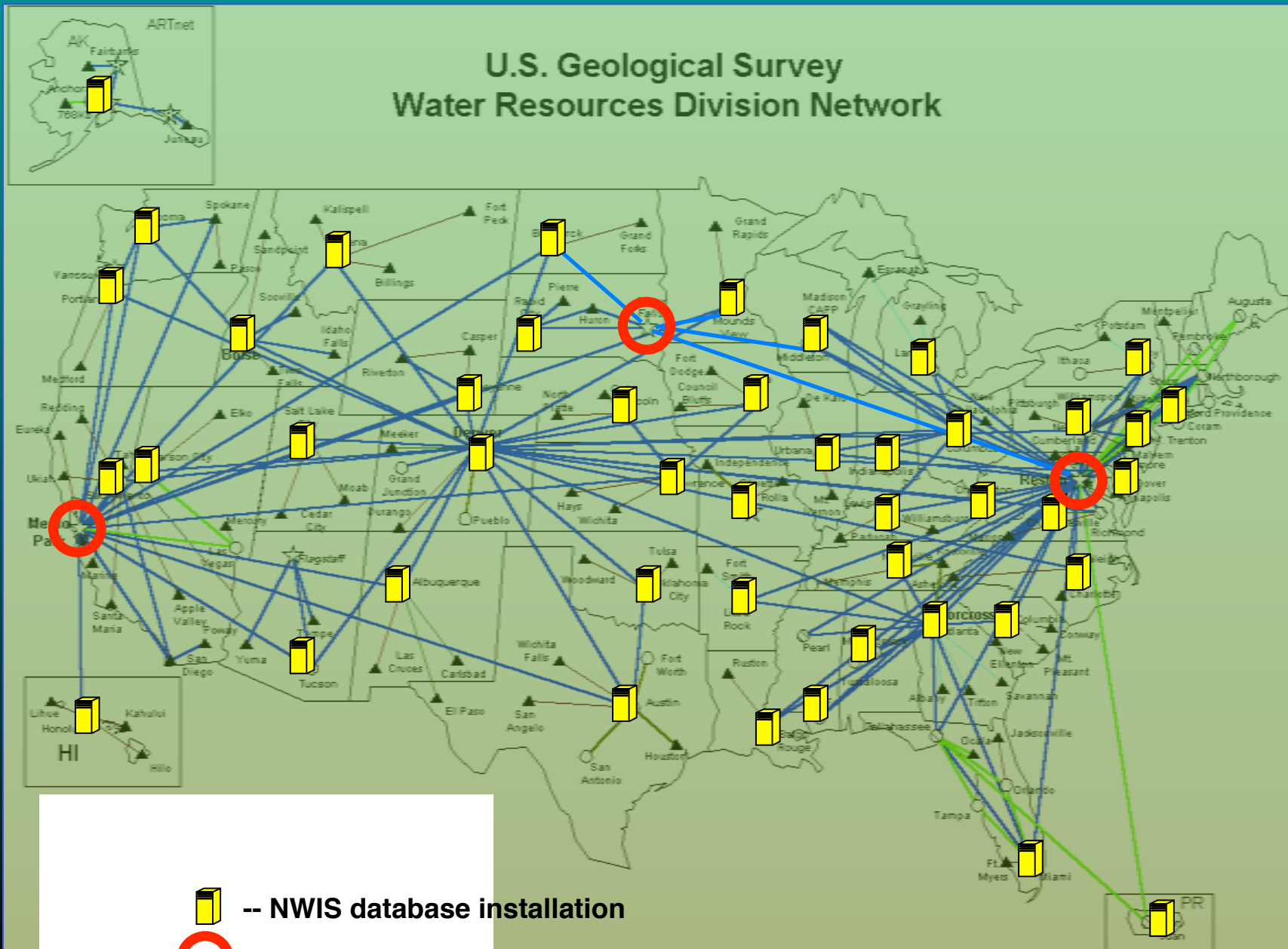




National Aggregate Dataset

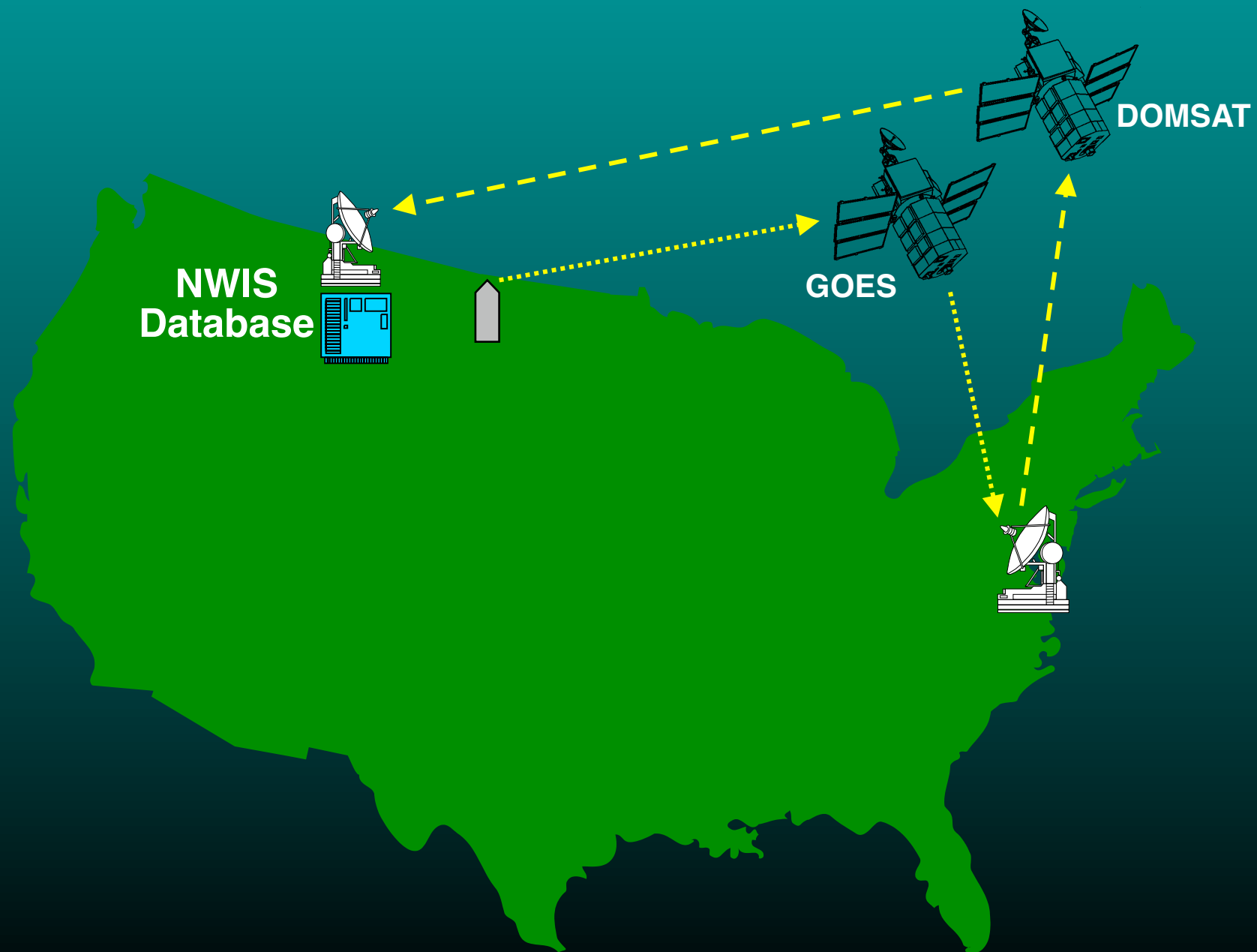
Total sites	1,541,987
Real-time sites	12,320
Daily values	324,567,200
Ground-water levels	8,437,274
Water Quality samples	4,836,150
Water Quality values	88,893,776
Peaks	699,583



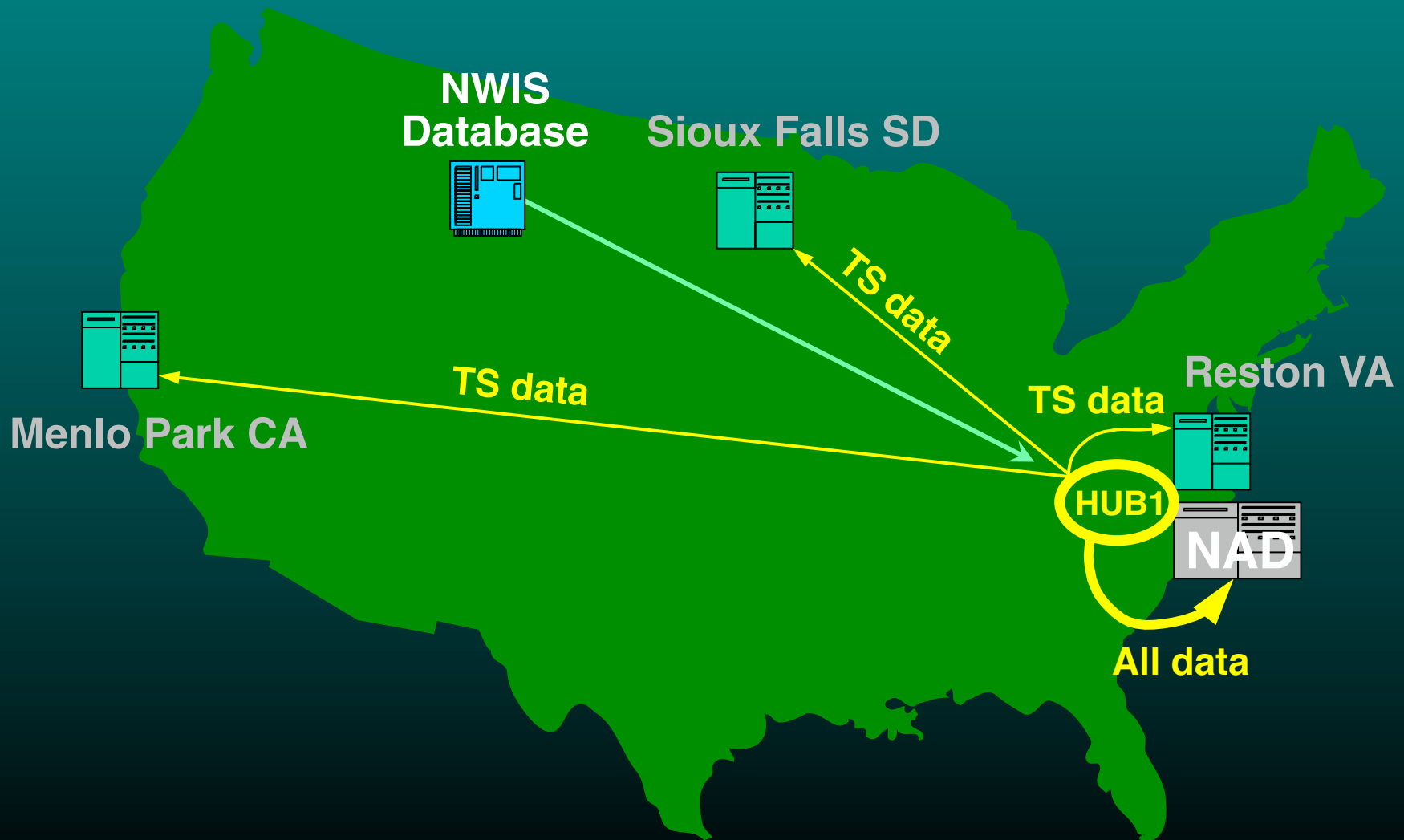
U.S. Geological Survey Water Resources Division Network



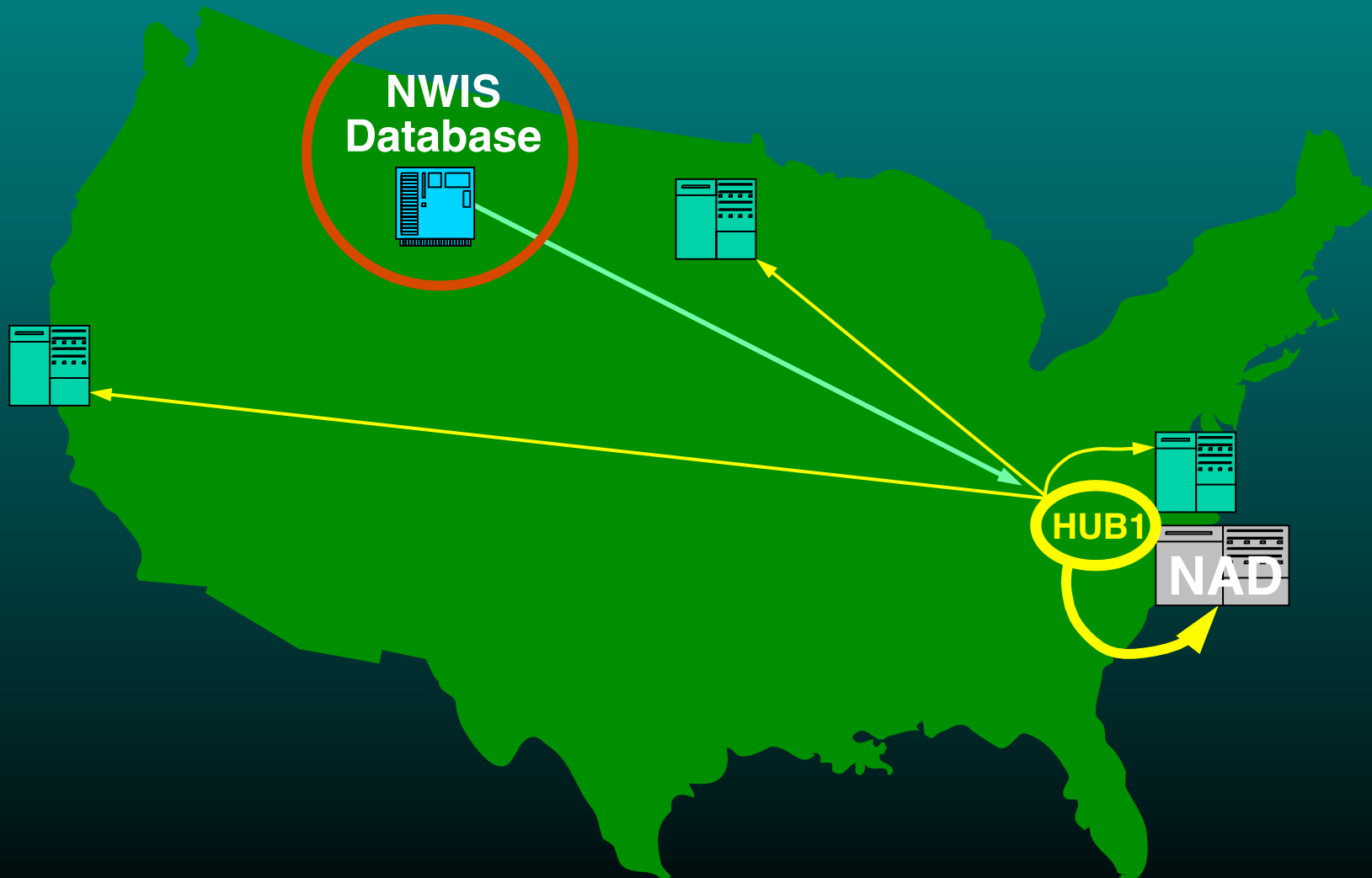
-  -- NWIS database installation
-  -- NatWeb Node with Firewall

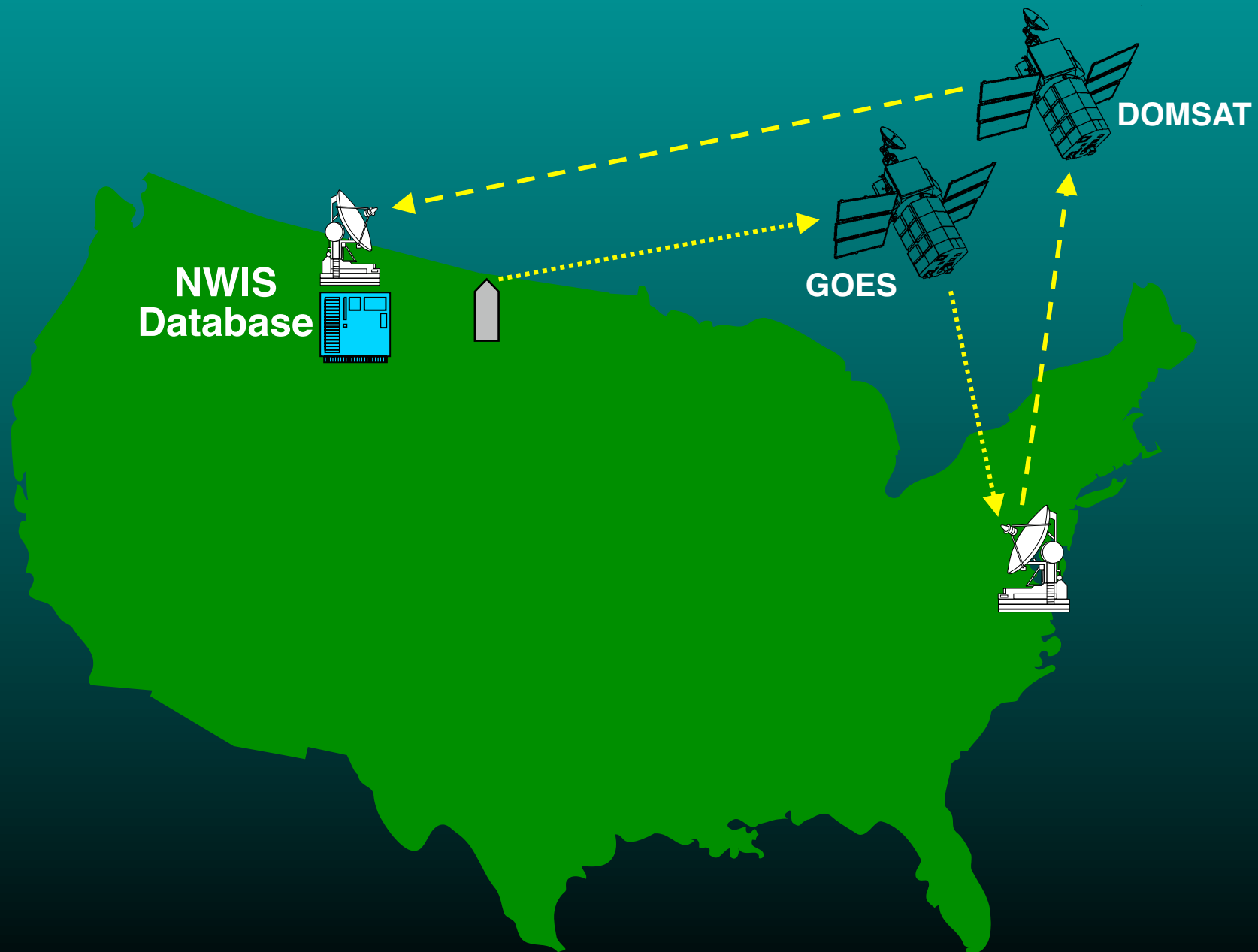


NWISWeb Data Transfer

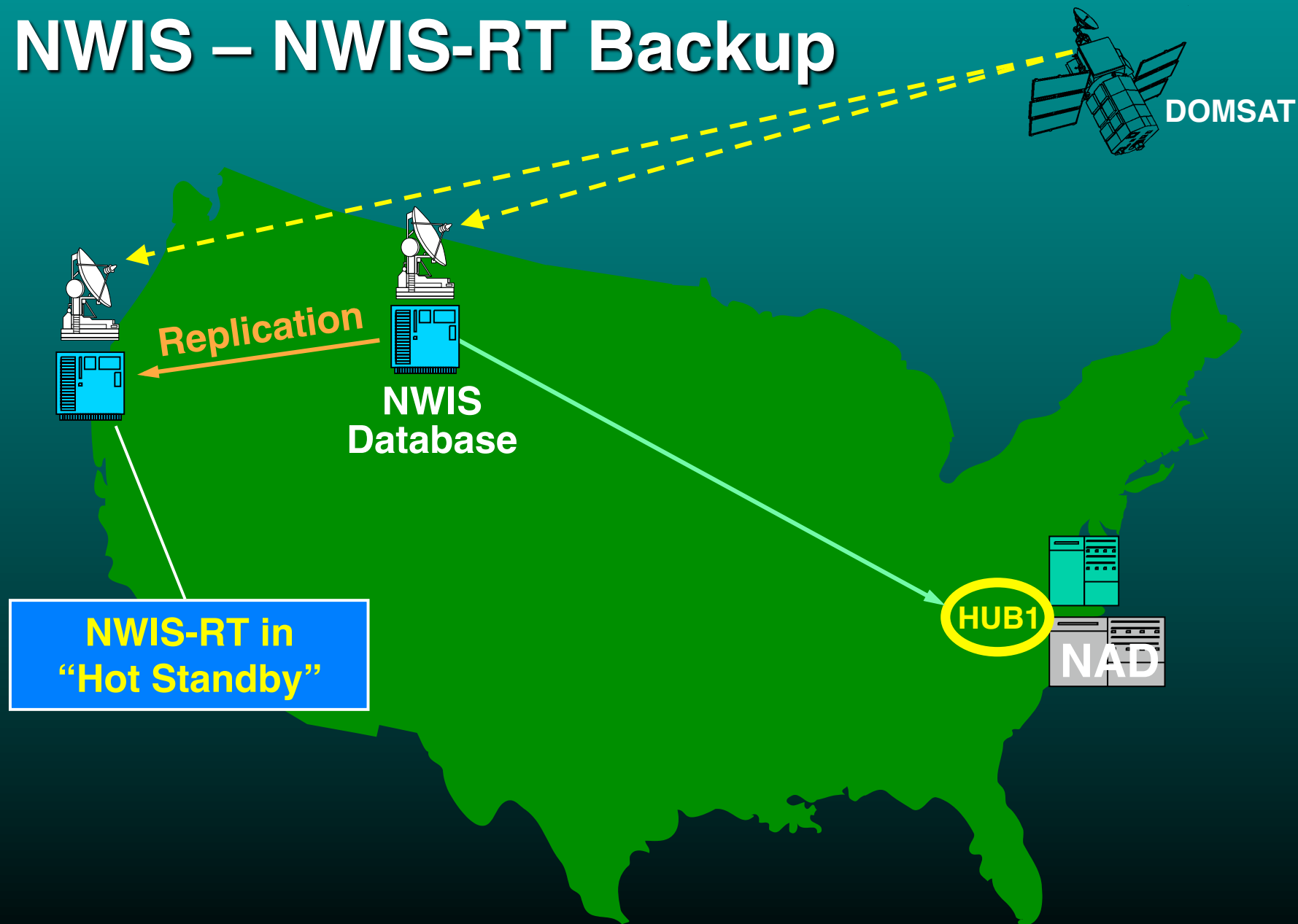


NWIS Database is single point of failure

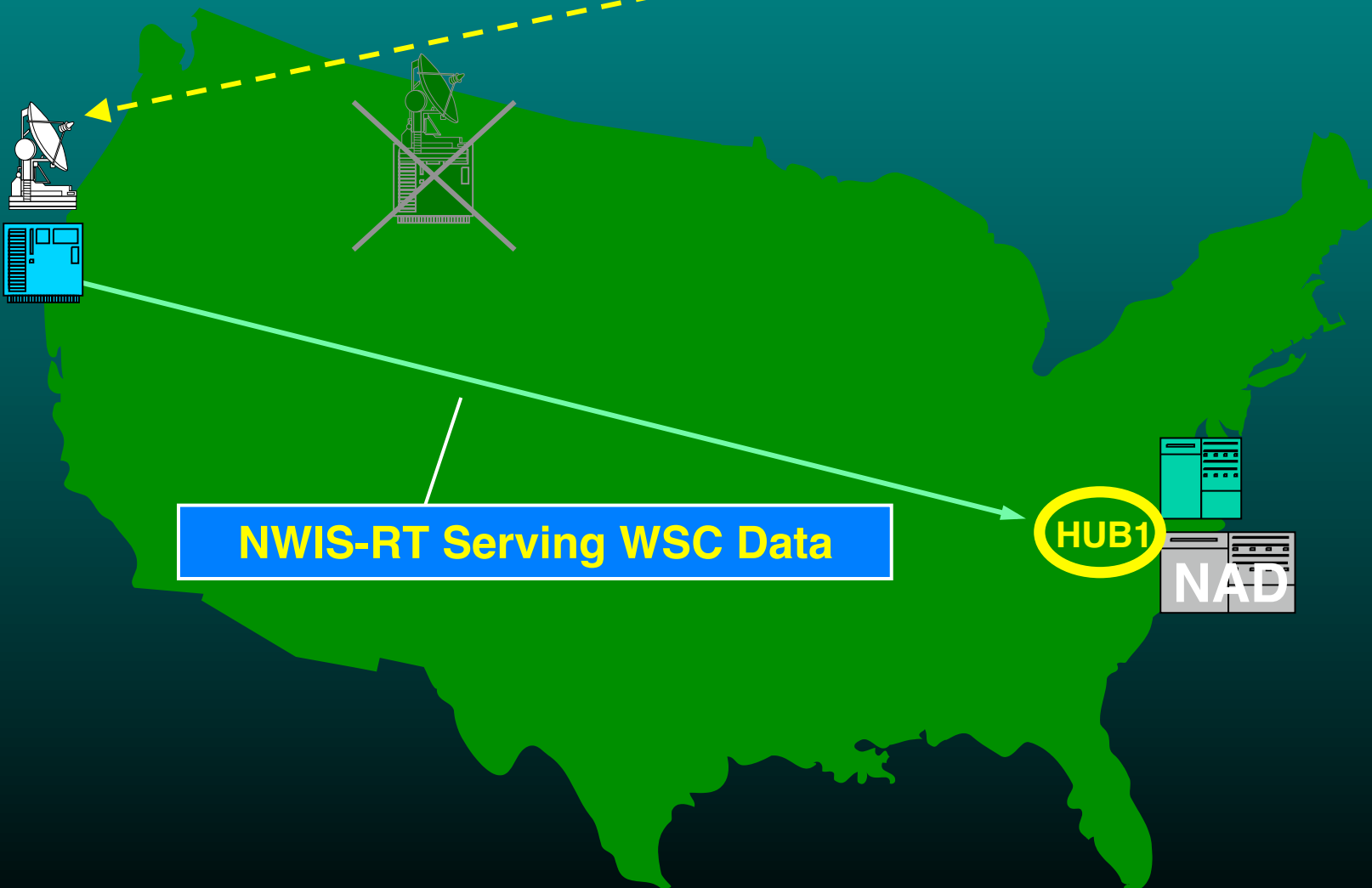
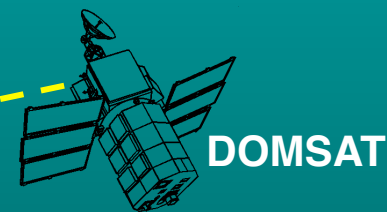




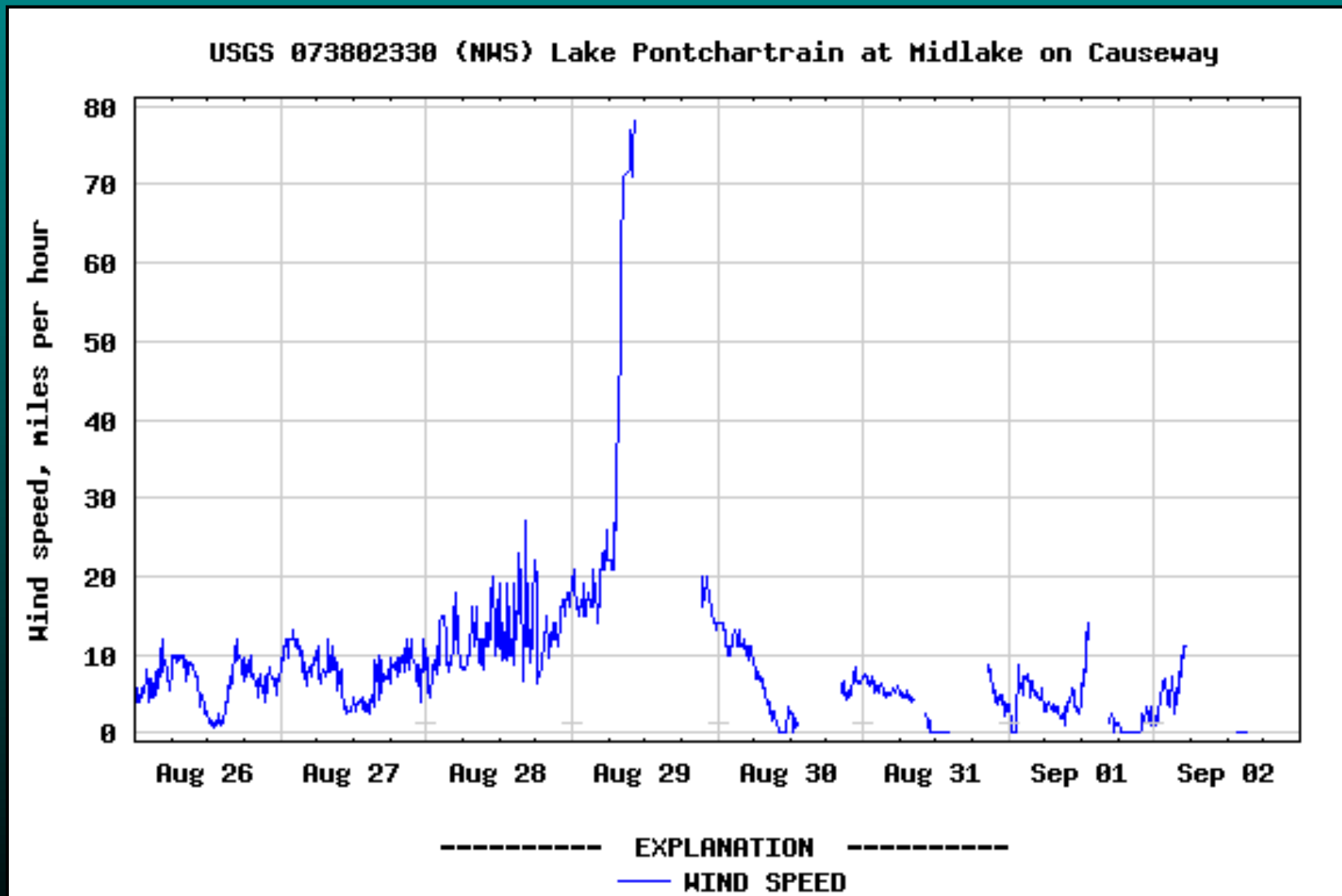
NWIS – NWIS-RT Backup



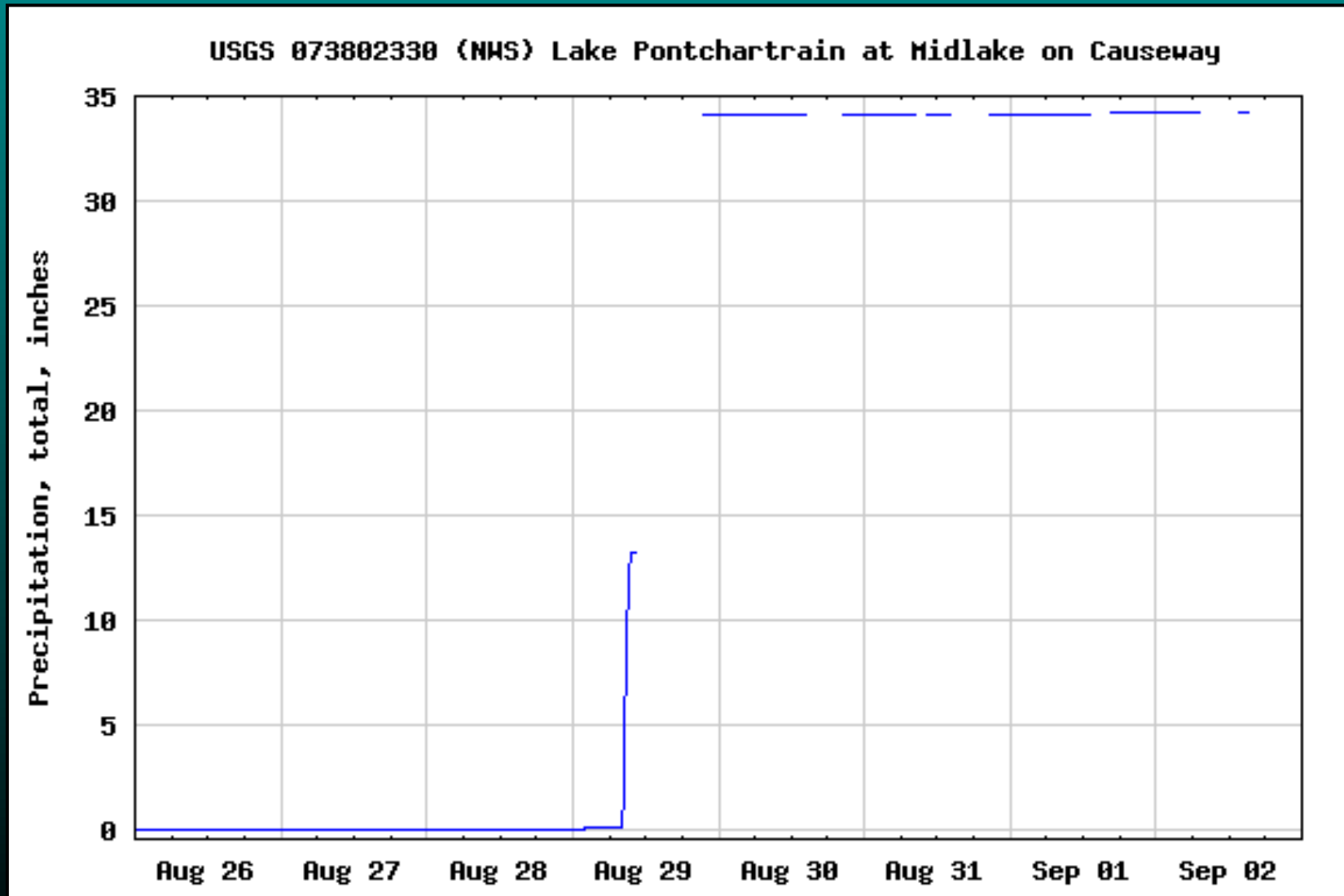
NWIS – NWIS-RT Backup



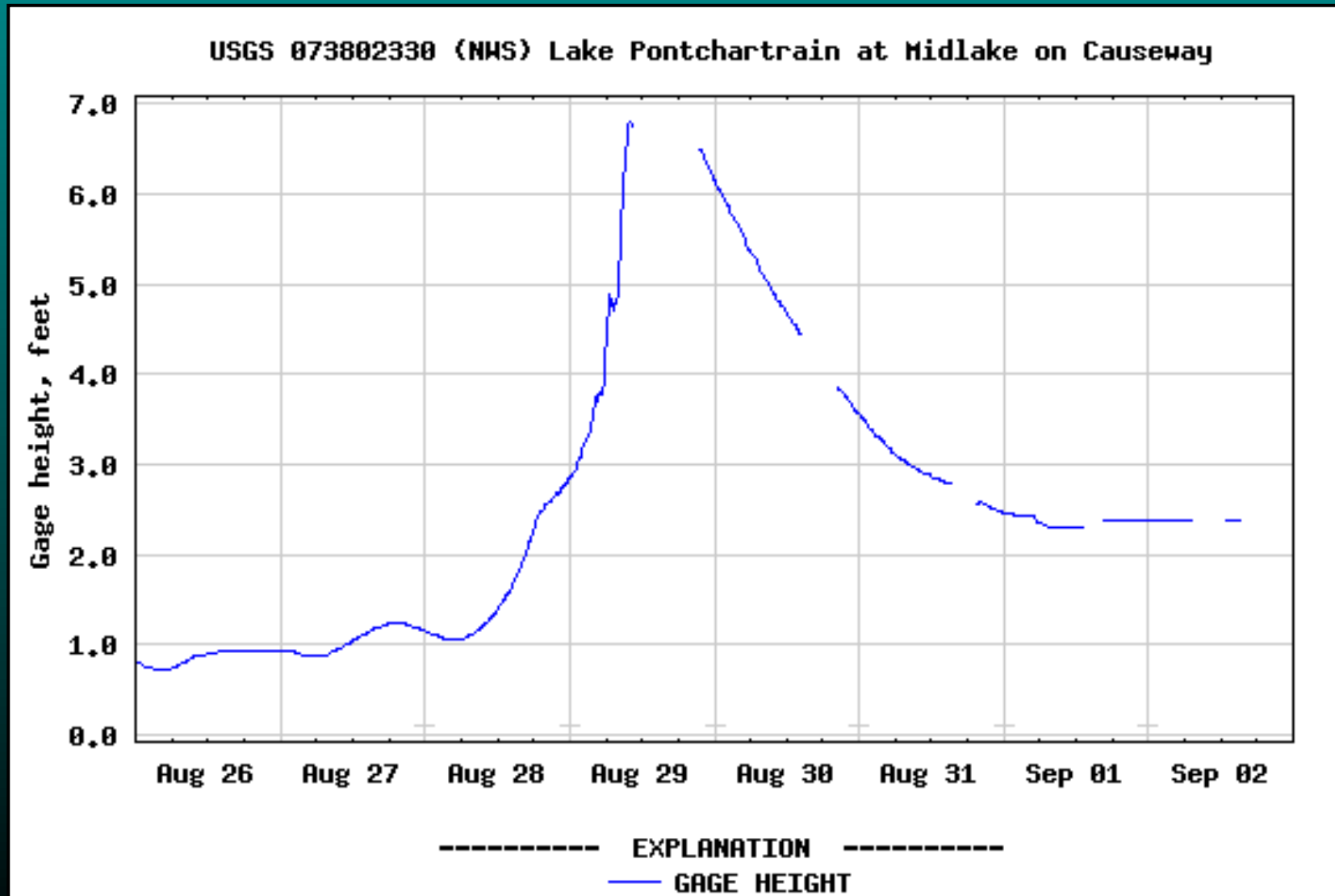
Louisiana Data -- Hurricane Katrina



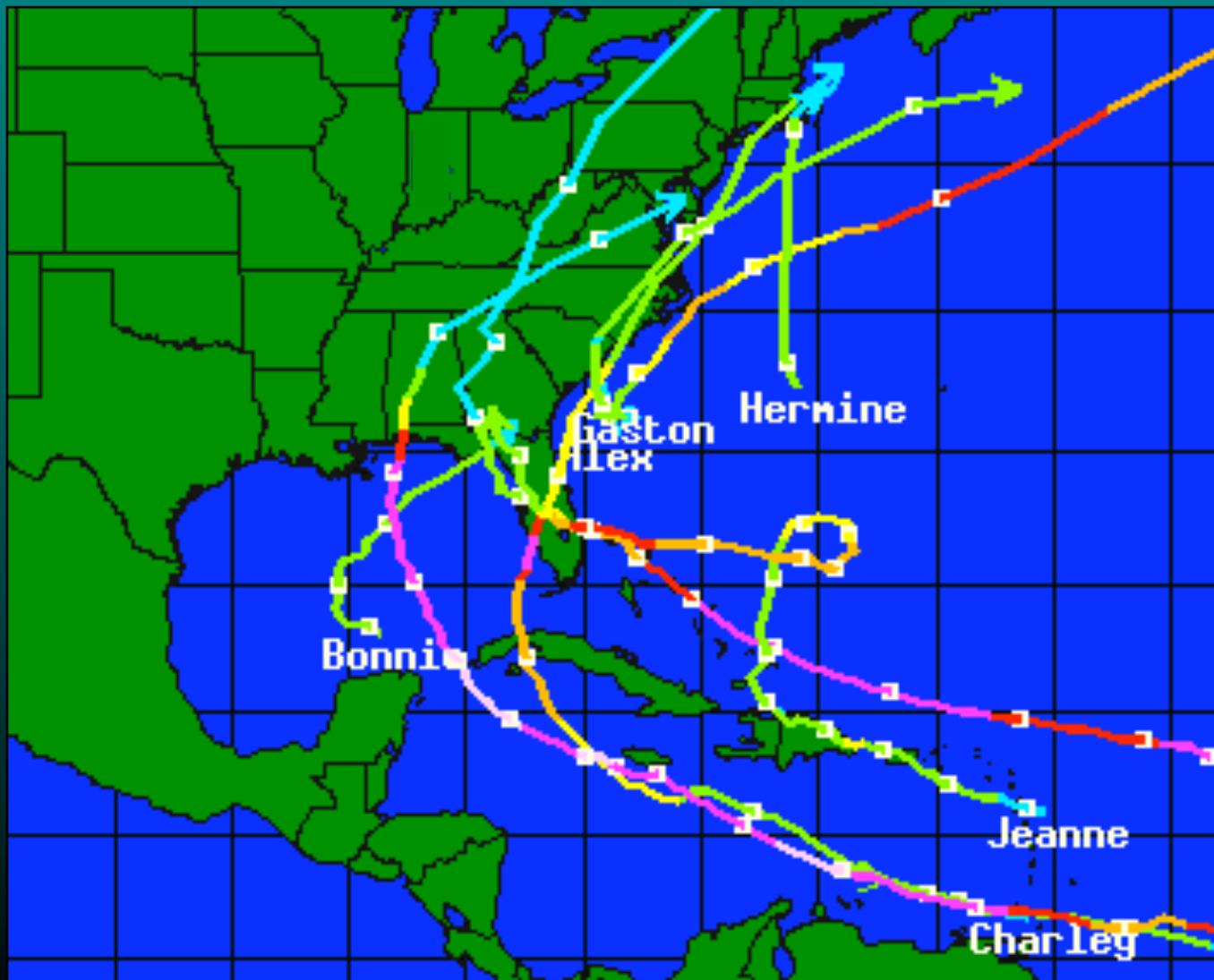
Louisiana Data -- Hurricane Katrina

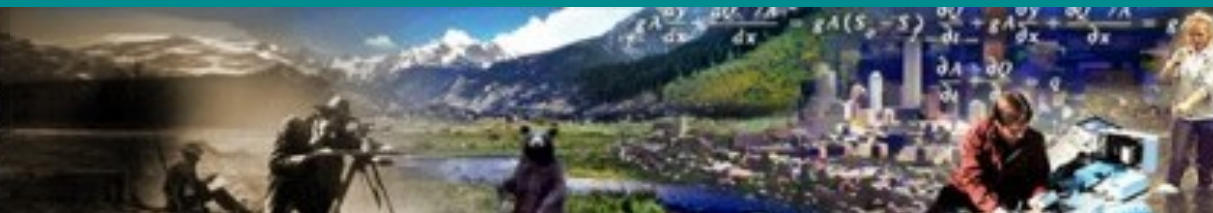


Louisiana Data -- Hurricane Katrina



2004 Tropical Storm Tracks





Topics:

- **NWIS / NWISWeb systems design**
 - Philosophy and architecture
- **Quality assurance**
 - Both system availability and data
- **Public and internal uses**
 - Nontraditional and automated access

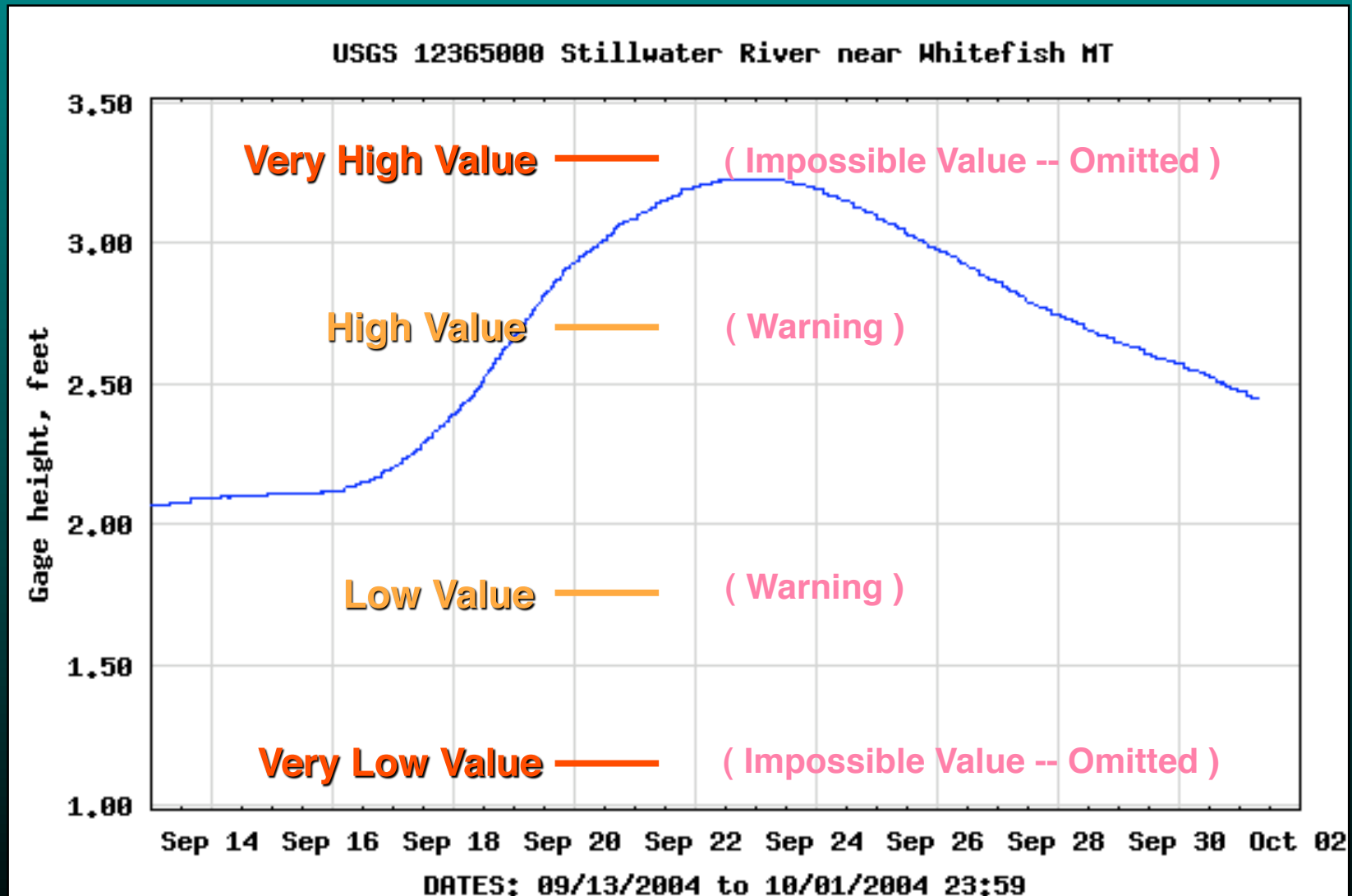
Quality Assurance of system availability:

- **Basic architecture**
 - 3 geographically distributed independent nodes
 - NWIS-RT backup processing
- **“Level 3” routing of waterdata.usgs.gov**
 - Wellness checking
 - Load balancing
- **“BigBrother” system monitoring**
- **“Keynote” monitoring of performance**
 - Provides a measure of public accessibility

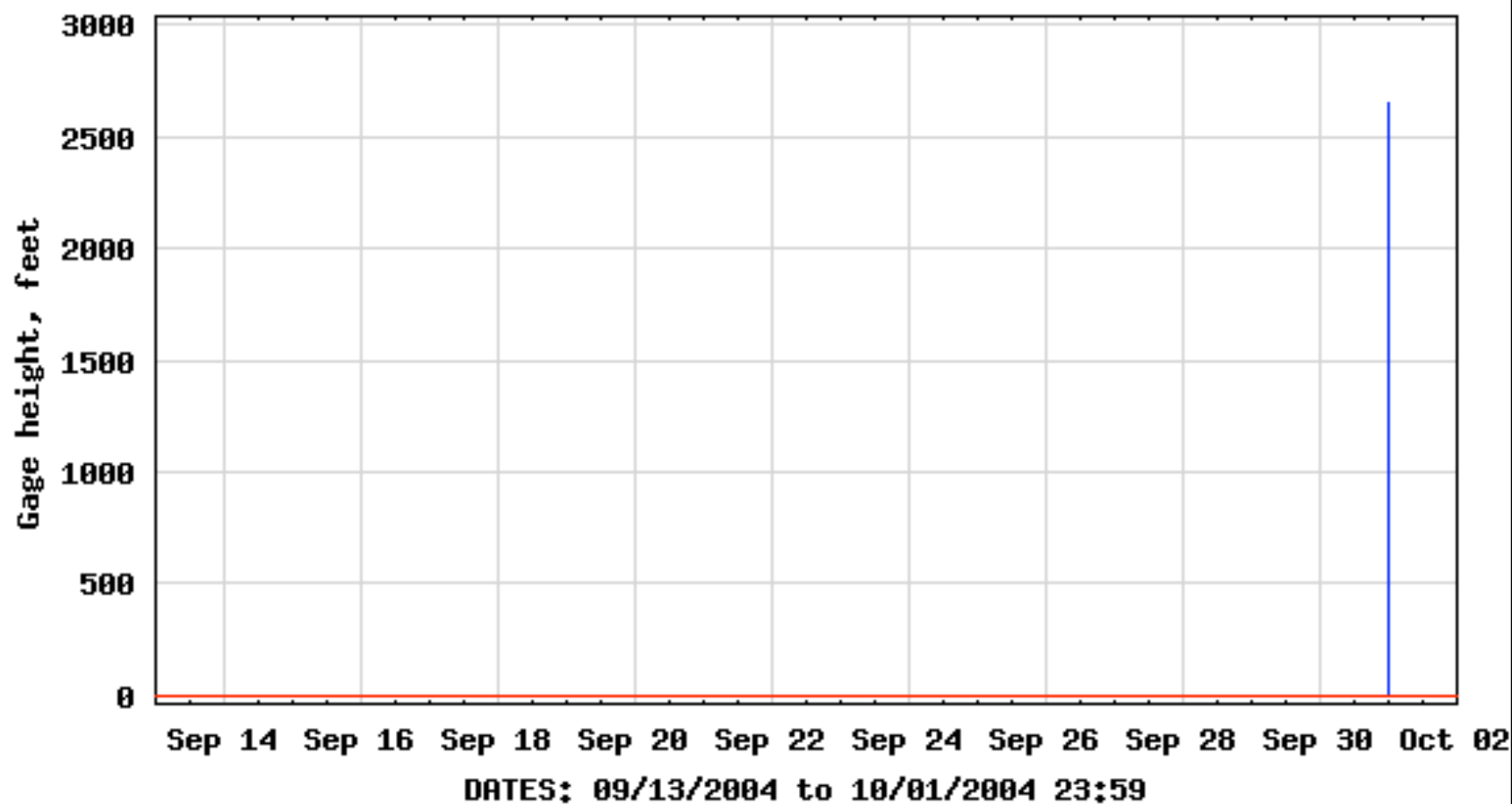
Quality Assurance of Data:

- **Automated Filtering**
 - Threshold filters applied during NWIS processing
 - Erroneous values omitted from public display and questionable values flagged for reviewer

Threshold Filters



USGS 12365000 Stillwater River near Whitefish MT

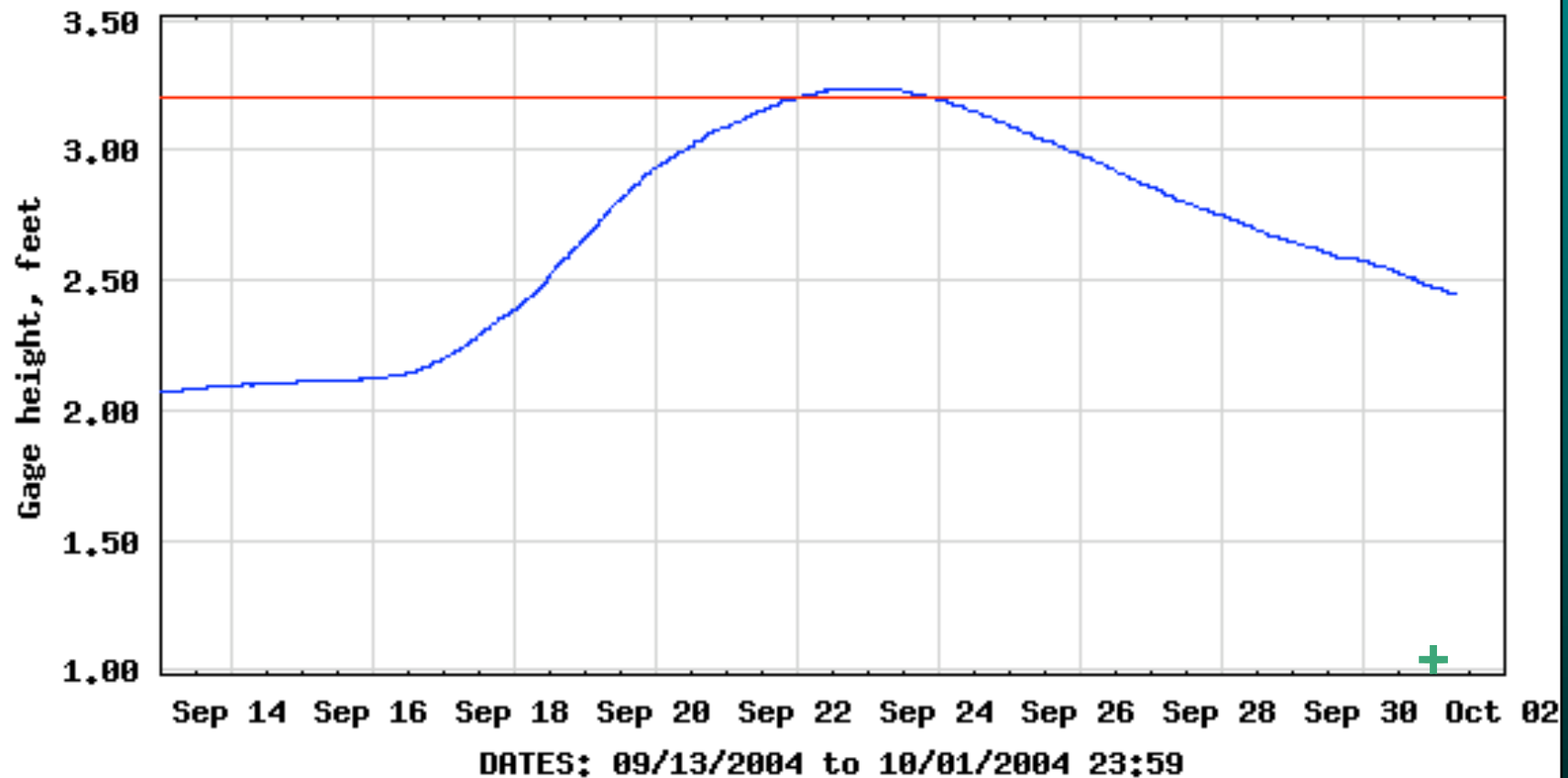


EXPLANATION

— GAGE HEIGHT

— National Weather Service Floodstage

USGS 12365000 Stillwater River near Whitefish MT



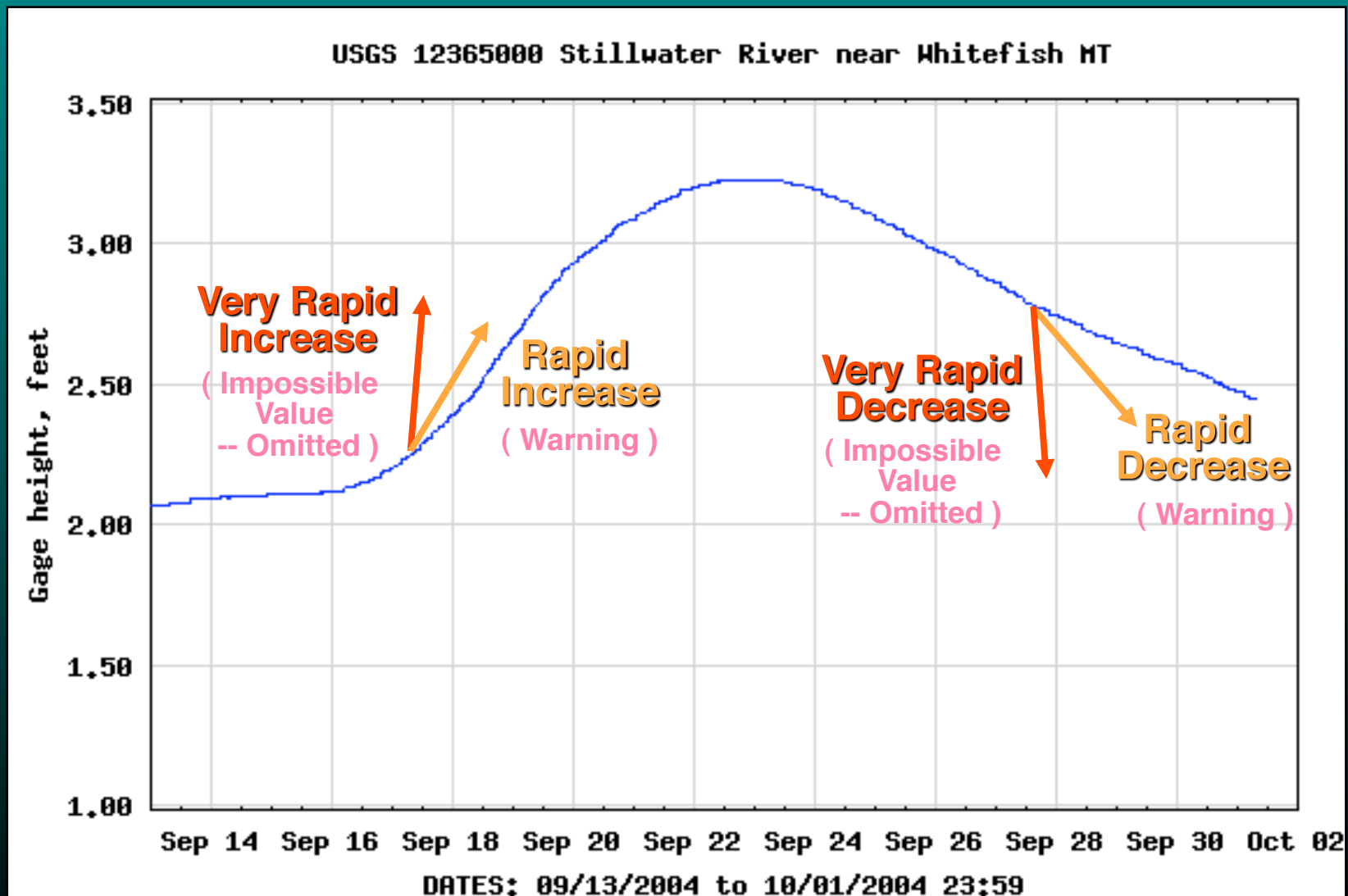
EXPLANATION

— GAGE HEIGHT

— National Weather Service Floodstage

+ Very high value

Threshold Filters



Quality Assurance of Data:

- **Automated Filtering**
 - Threshold filters applied during NWIS processing
 - Erroneous values omitted from public display and questionable values flagged for reviewer
- **Periodic visual inspection**
 - Reviewer created lists of selected sites
 - Internal-only reference levels provide additional context for QA process
 - Masking of questionable / bad data

National Water Information System: Web Interface

[USGS Water Resources](#) (USGS Access)

Data Category:

Real-time

Geographic Area:

Montana

GO

USGS Real-Time Water Data for Montana: Build Sequence

Select sites which meet all of the following criteria:

Define one or more values for each of the following site-selection criteria: --- or select [new criteria](#)

INTERNAL Site List -- Select one

- FlatheadLake.rdb
- FlatheadLake.rdb
- Kalispell_DCPS.rdb
- Lewis_and_Clark_Co.rdb
- ftpeck.all.rdb
- ftpeck.rdb
- ftpeck_winterdcp.rdb
- intl_eastribs.rdb
- intl_havrerun.rdb
- intl_site_file.rdb
- kalispell_precip_sites.rdb
- steve.test
- yellowstone_sites.rdb
- ~basin_mt.rdb
- ~basin_mt01.rdb
- ~basin_mt02.rdb
- ~basin_mt03.rdb
- ~basin_mt04.rdb
- ~basin_mt05.rdb
- ~contact_alfurrow.rdb

Select sites that have data for the following parameters:

Parameters --or-- leave blank to select all:

Parameters

- ft below land surface (3 sites)
- 1929, ft (9 sites)
- 1929, m (2 sites)
- water surface above datum, ft
- datum, m (22 sites)
- (3 sites)
- (1 sites)
- elevation above NGVD 1929, in ft
- (9 sites)
- (2 sites)

Meteorological Parameters

- ☐ Precipitation, total, in (35 sites)
- ☐ Temperature, air, °C (1 sites)
- ☐ Temperature, air, °F (12 sites)

Physical Properties Parameters

- ☐ Distance, observation point to stream bottom, feet (3 sites)

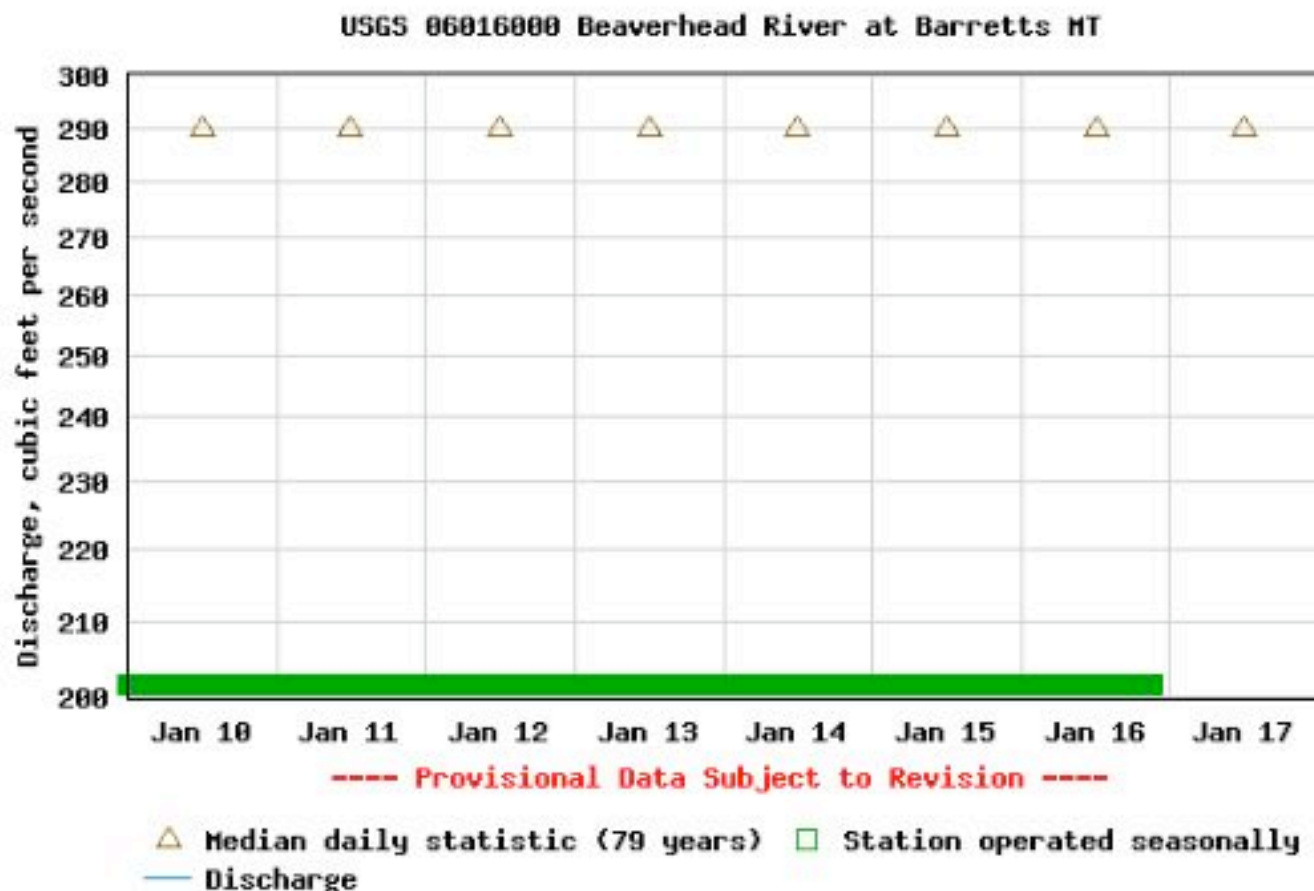
DCP/Gage Performance Parameters

- ☐ DCP battery voltage, V (34 sites)
- ☐ Data collection platform transmission delivery delay, seconds (6 sites)

USGS [06016000](#) Beaverhead River at Barretts MT

Discharge, cubic feet per second

Most recent instantaneous value: [Ssn](#) 01-16-2010 21:15 MST [Prev](#) [Next](#)



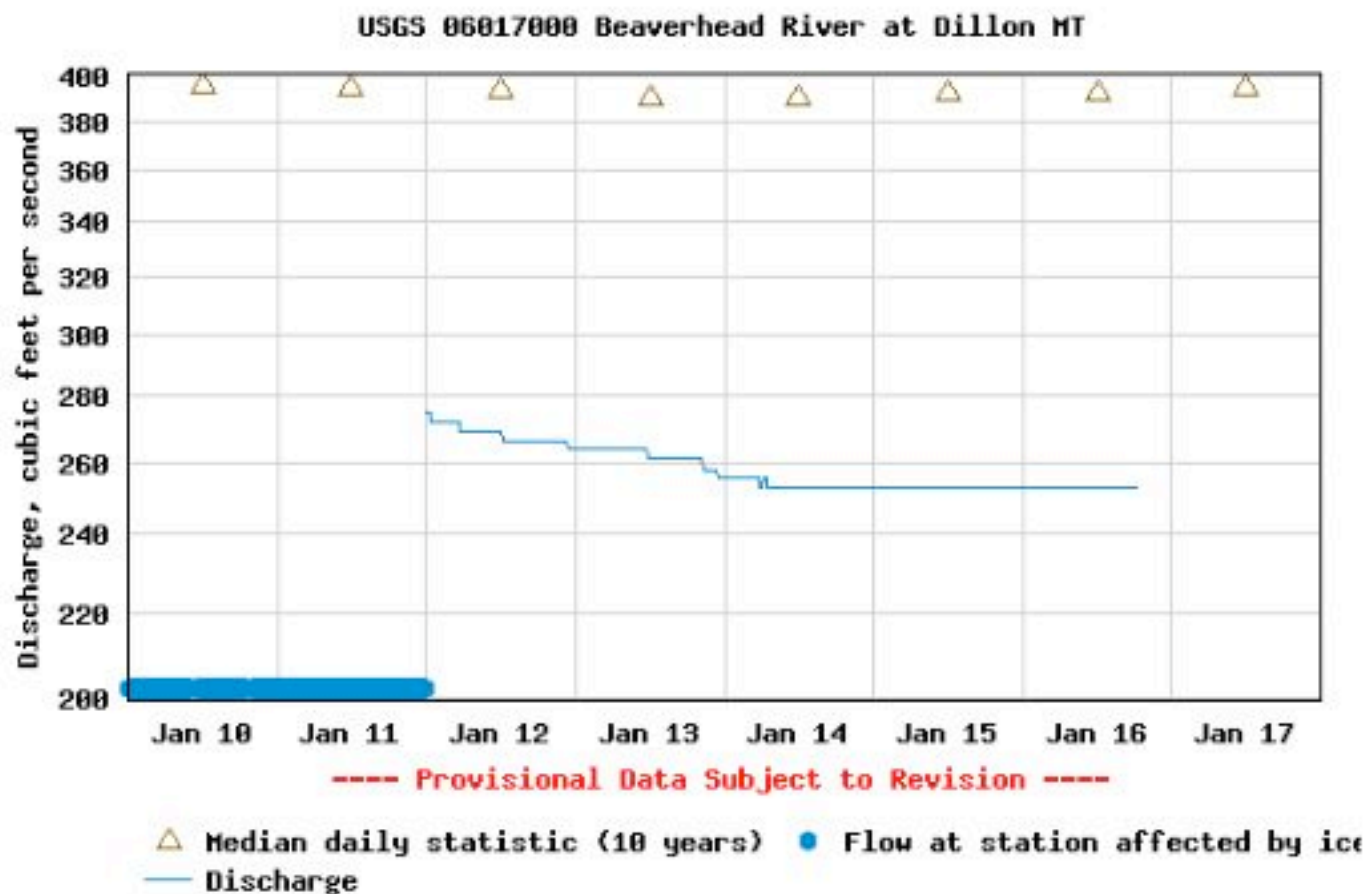
Create [presentation-quality](#) / [stand-alone](#) graph

parm 00060 DD02

USGS [06017000](#) Beaverhead River at Dillon MT

Discharge, cubic feet per second

Most recent instantaneous value: 253 01-16-2010 18:15 MST [Prev](#) [Next](#)



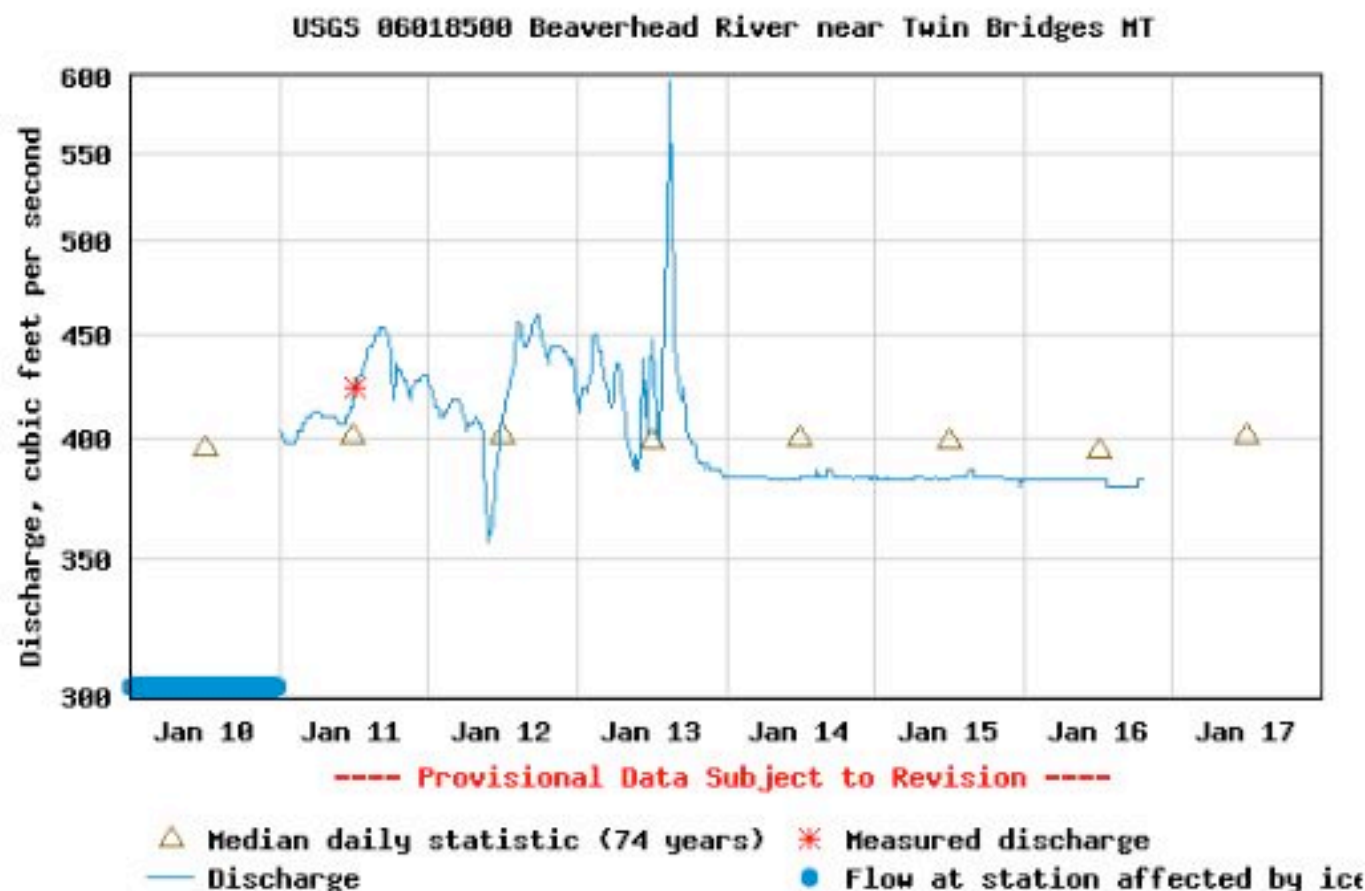
Create [presentation-quality](#) / [stand-alone](#) graph

parm 00060 DD01

USGS [06018500](#) Beaverhead River near Twin Bridges MT

Discharge, cubic feet per second

Most recent instantaneous value: 382 01-16-2010 19:00 MST [Prev](#) [Next](#)



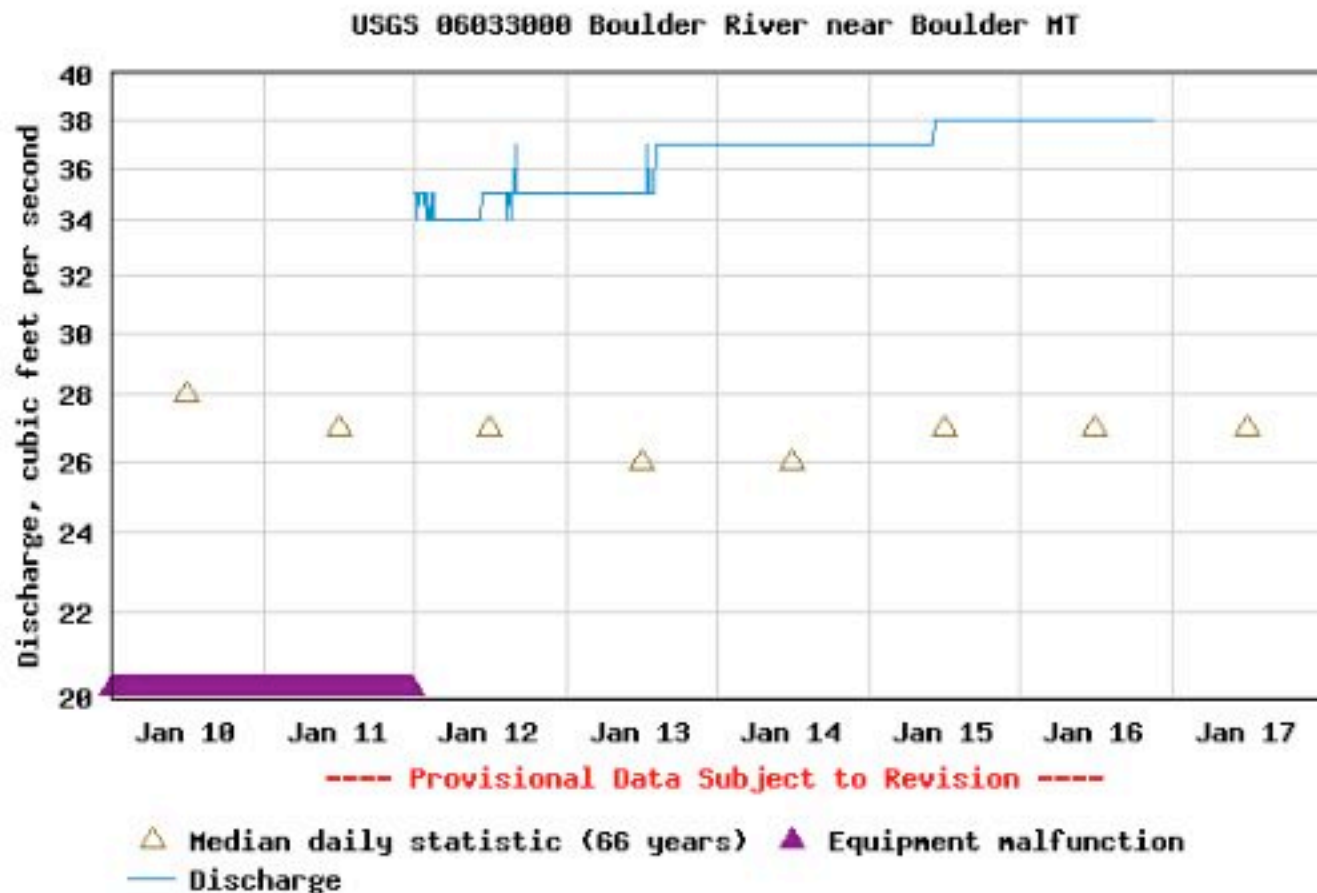
Create [presentation-quality](#) / [stand-alone](#) graph

parm 00060 DD05

USGS [06033000](#) Boulder River near Boulder MT

Discharge, cubic feet per second

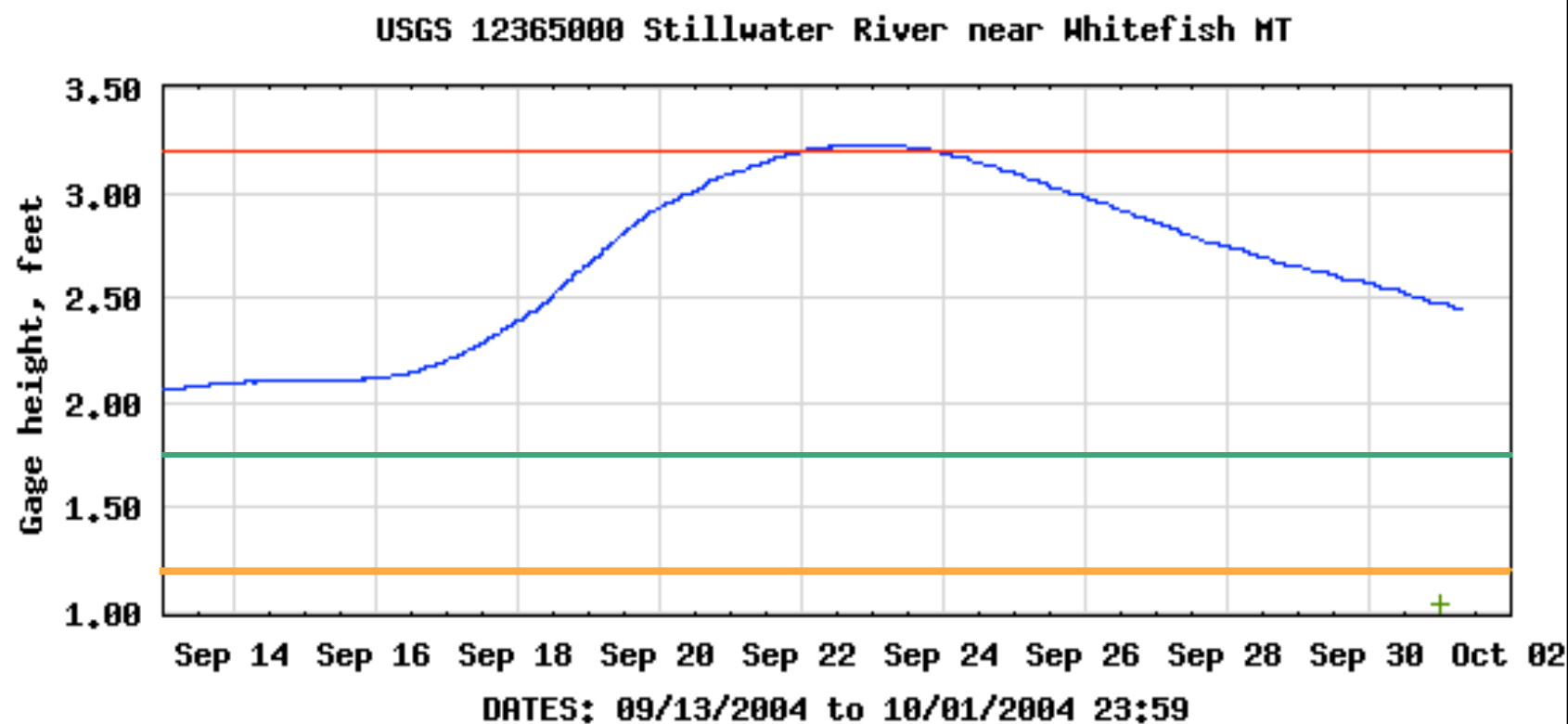
Most recent instantaneous value: 38 01-16-2010 21:15 MST [Prev](#) [Next](#)



Create [presentation-quality](#) / [stand-alone](#) graph

parm 00060 DD01

Internal / Public Reference Levels



EXPLANATION

- GAGE HEIGHT
- + Very high value
- National Weather Service Floodstage
- Need measurement below 1.75: Get your butt out there Joe!
- Zero flow at 1.2



Quality Assurance of Data:

- **Automated Filtering**
 - Threshold filters applied during NWIS processing
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- **Periodic visual inspection**
 - Reviewer created lists of selected sites
 - Internal-only reference levels provide additional context for QA process
 - Masking of questionable / bad data
- **Daily “QA report” from National system**

[illegible]

		Publicly viewable sites scanned		
			Sites w/ error in previous 60 days	
Parameter			Sites w/ error older than 3 days	
00065 -- Gage height	8,957	24	13	
72019 -- Depth to water below LSD	995	19	18	
72020 -- Elevation	410	3	1	
00010 -- Water temperature	1,438	2	1	
00076 -- Turbidity	3	0	0	
61028 -- Turbidity,wu,fld	1	0	0	
00095 -- Specific conductance	757	1	1	
00300 -- Dissolved oxygen	354	0	0	
00400 -- pH	286	1	1	

```
== Parameter: 00065 -- Gage height|
== 8,957 publicly viewable sites scanned -- 690.87 sec
== 24 sites have at least one error in last 60 days
== 13 sites have at least one error that is more than 3 days old
```

```
== Test values: Diff = 15
```

== Graphs of all 24 sites:

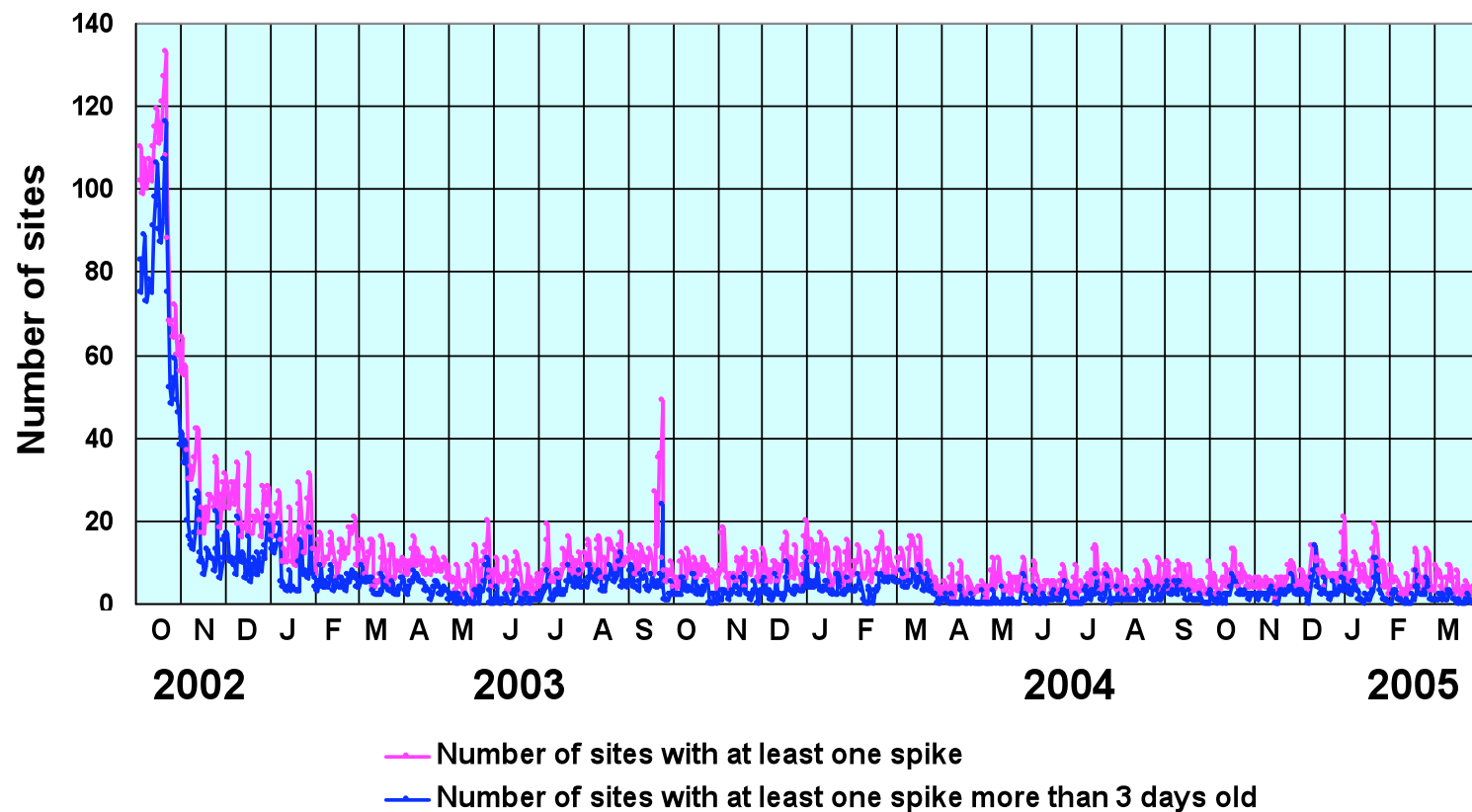
http://nwis.waterdata.usgs.gov/nwis/uv?site_no=list=P00065_ga&pmcode=00065&period=60

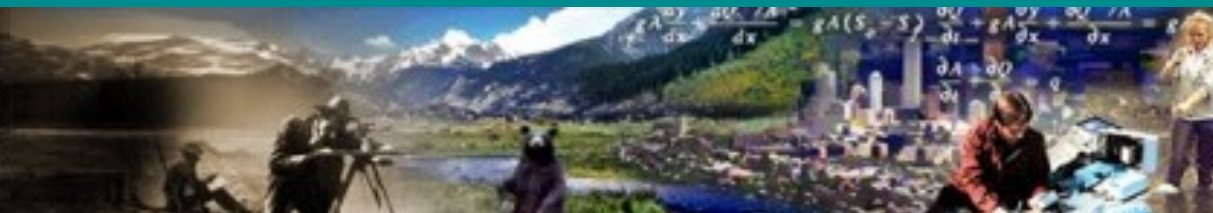
==	STATE	NWIS host	Number of sites with errors	
==	SC	sun1dsc cmb	3	***
==	SD	sv08dsdhrn	2	**
==	TN	sun1dtnnsh	2	**
==	AL	sun1dalmtg	2	**
==	AZ	sun0daztcn	2	**
==	IA	srv1diaiwc	2	**
==	FL	flnwis1	2	**
==	NV	dsp2dnvcrs	2	**



Daily QA Report -- Results

Number of real-time sites with spikes in stage data





Topics:

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Testimonial:

"Memorial Weekend we took 40 Boy Scouts and adults in canoes on the Peace River in FL and your site was priceless. This past weekend, without USGS water level information and the ability to compare it to water levels from earlier years, years in which we had successful trips, we would not have gone. Our relying on USGS information is not an isolated occurrence as we monitor at least 4 rivers. This is simply the one time I felt guilty enough to stop and say thanks for the good work and the web site. Please keep it available."

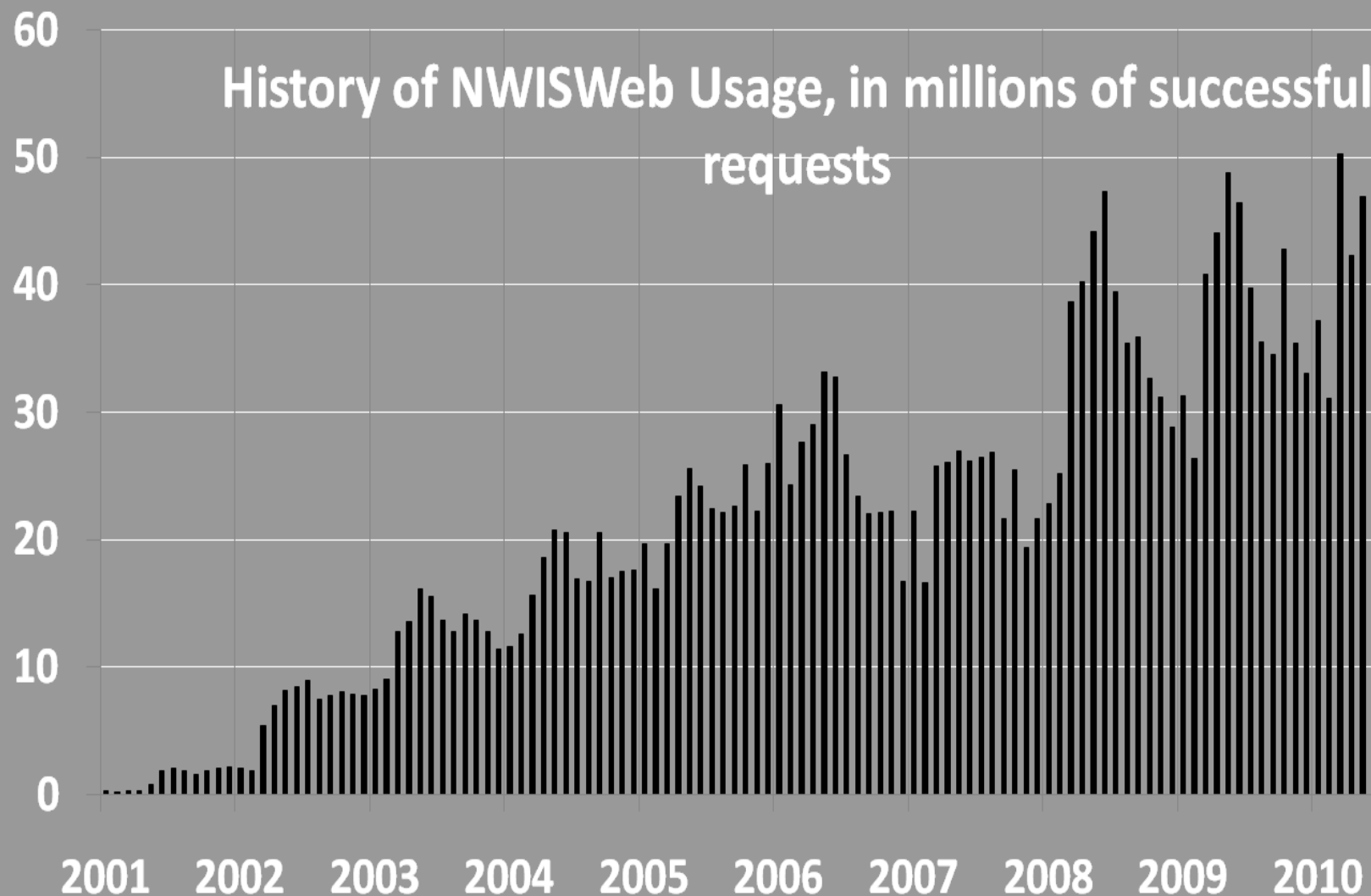
Testimonial:

Principal of a School: "Our school floods quite frequently. I have calibrated our response and reactions to this great data source. I deeply appreciate the availability, as do the 300+ families who benefit from the benefit our school gains from the data."

Testimonial:

*"I live on lakefront property at Canyon Lake, Texas. **Your website was like a bright light in a dark cave** during the flood of 2002. You gave us the essential and critical information needed to make major decisions which would effect my family and home. Thank you for providing a portal to the big picture, enabling us to make timely decisions with up to date information. Making accurate decisions is difficult when threatened with flooding, but it would have been impossible without your website. Keep up the good work."*

History of NWISWeb Usage, in millions of successful requests



Public and Internal Uses

- **NWISWeb uses http GET**
 - 99.9+ % of pages are “bookmarkable”
 - All data are retrievable in tab-delimited (RDB) format
 - ~50% of total hits are from automated programs (not a user at a browser)

Public and Internal Uses

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```

=====
==  Automated retrieval report for 2010-01-11
==    Scanning all active waterdata and 1 nwis.waterdata access_logs combined
=====

=== Scanning full page log entries only -- images and other entries processed later

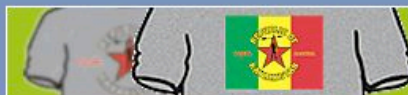
Total pages served      561114 --  11723 Mbytes      (53418 hits with no size info)
Automated retrievals    280398 --   5398 Mbytes
                        50.0% --  46.1%

----- Automated "pages" retrievals grouped by data type
-----
Data type                pages / %total      Mbytes / %total
-----
UV data                  224564   80.1        3591.6   66.5
UV/DV Summary table     23543    8.4         983.7   18.2
DV data                  8043     2.9         392.3    7.3
OLD:Expanded rating     3241     1.2          98.7    1.8
Site inventory          2792     1.0          57.4    1.1
Get_ratings              79       0.0           3.4    0.1
Site visit               4        0.0           0.1    0.0
Water-quality            3        0.0           0.0    0.0
Peak flow                0        0.0           0.0    0.0
GW levels                0        0.0           0.0    0.0
Total 262269 93.6      5127.2 95.0

```

----- Automated "pages" retrievals grouped by requesting host

Hits	Mbytes	Agent %	Requesting host	Start	End
14198	171.2	"-"	92.5c.78ae.static.theplanet.com	10:39:06	- 22:24:48
13965	100.0	Wget	67.41.184.233	00:00:07	- 23:59:59
10687	86.1	Java	neptune.dl.stevens-tech.edu	00:00:09	- 23:46:53
10528	97.0	lwp-trivial 86%	vpn.crh.noaa.gov	00:00:02	- 23:50:39
10269	19.5	"-"	biggun.boatertalk.com	00:00:00	- 23:59:58
9353	18.2	"-"	npws01.deos.udel.edu	00:00:05	- 23:40:21
8768	56.7	Wget	rvpmdesigns.com	00:01:58	- 23:32:05
8202	16.9	Python-urllib	69-162-212-82.static.acsalaska.net	00:00:02	- 23:59:10
8136	150.4	Wget	hads1x2.nws.noaa.gov	00:00:01	- 23:17:26
7507	85.6	Wget	sun1dmeags.er.usgs.gov	00:05:00	- 23:56:01
6376	13.4	Lynx	sun3dwatcm.wr.usgs.gov	00:03:02	- 23:30:01
5230	23.1	Wget	static-host-209-33-202-132.mokisystems.com	00:00:06	- 23:50:36
4624	52.3	Java	131.191.149.78	00:05:51	- 23:55:48
4585	34.1	Java 94%	cedant2.abac.com	00:00:43	- 23:59:44
4369	95.2	lwp-trivial	dkslwq.cr.usgs.gov	00:00:02	- 23:03:52
4097	20.0	Java	156.110.99.73	00:02:00	- 23:52:39
3884	171.0	Python-urllib 77%	vsas910.sas.usace.army.mil	00:01:40	- 23:58:20
3598	49.0	"-"	65-66-197-215.coral-energy.com	03:05:11	- 04:05:15
3517	33.4	Wget	sundwindn.er.usgs.gov	00:10:00	- 17:34:59
2994	123.2	"-"	dnrdenww1.naturenet.state.co.us	00:08:14	- 23:58:59
2994	25.9	Java	156.110.99.74	00:05:19	- 23:51:04
2833	23.0	"-"	w040.z064220040.nhv-ct.dsl.cnc.net	00:00:00	- 23:46:43
2778	3.9	"-"	76.12.191.140	00:07:57	- 23:59:44
2694	5.3	Lynx	fs05svarmd.er.usgs.gov	00:00:00	- 23:45:20



**A COOL CHRISTMAS
GIFT IDEA!**

Login Register Home Forums Resources User Member Commercial Reference



BoaterTalk Gauges

52 Gauges found



Going up: ● Going down: ● Steady: ● Water Data courtesy of [USGS](#)

Find USGS gauge by site number:

Add

Biggest Increases

False R Nr Oakley Ca
Uncompahgre River At Delta, Co.
Mf Salmon River At Mf Lodge Nr Yellow Pine Id
Ichawaynochaway Creek At Ga 37, Near Morgan, Ga

Biggest Decreases

Old R A Franks Tract Nr Terminous Ca
Ocklawaha R At Rodman Dam Near Orange Springs, Fl
Roaring Fork River At Glenwood Springs, Co.
Menomonee River At Menomonee Falls, Wi

boating on your mind?

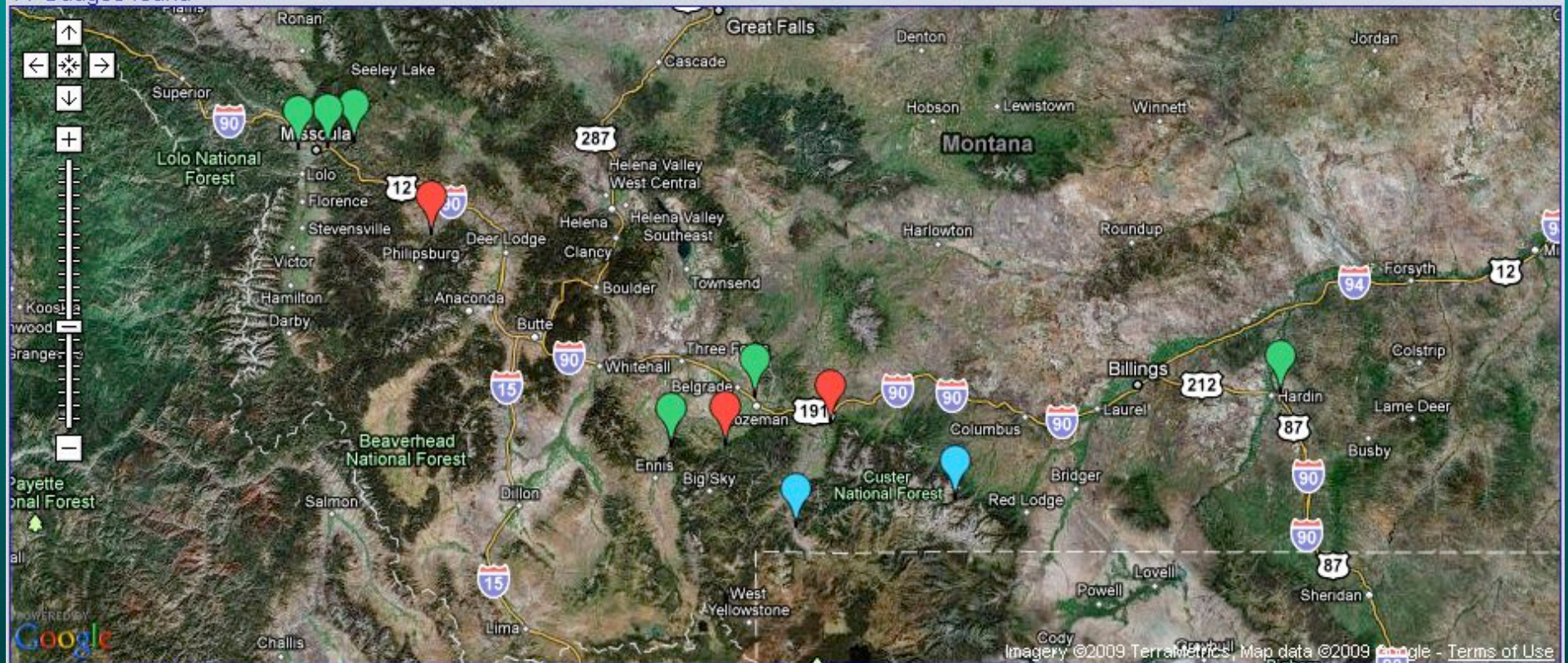


Popular Gauges

- [Chattanooga River Near Clayton, Ga](#)
- [Tellico River At Tellico Plains, Tn](#)
- [Big Sandy Creek At Rockville, Wv](#)
- [French Broad River At Marshall, Nc](#)
- [Duck River Near Shelbyville, Tn](#)
- [Chattahoochee River Near Cornelia, Ga](#)
- [Roaring Fork River At Glenwood Springs, Co.](#)
- [White Lick Creek At Mooresville, In](#)
- [South Platte River Below Union Ave, At Englewood, Co](#)
- [Mf Salmon River At Mf Lodge Nr Yellow Pine Id](#)
- [Maury River At Rockbridge Baths, Va](#)
- [Clear Creek At Lilly Bridge Near Lancing, Tn](#)
- [James River Near Richmond, Va](#)
- [Yellow River At Ga 124, Near Lithonia, Ga](#)
- [Tallulah River Near Clayton, Ga](#)
- [Potomac River Near Wash, Dc](#)
- [Little Falls Pump Sta](#)
- [Cedar River At Waterloo, Ia](#)
- [Clear Creek At Golden, Co.](#)



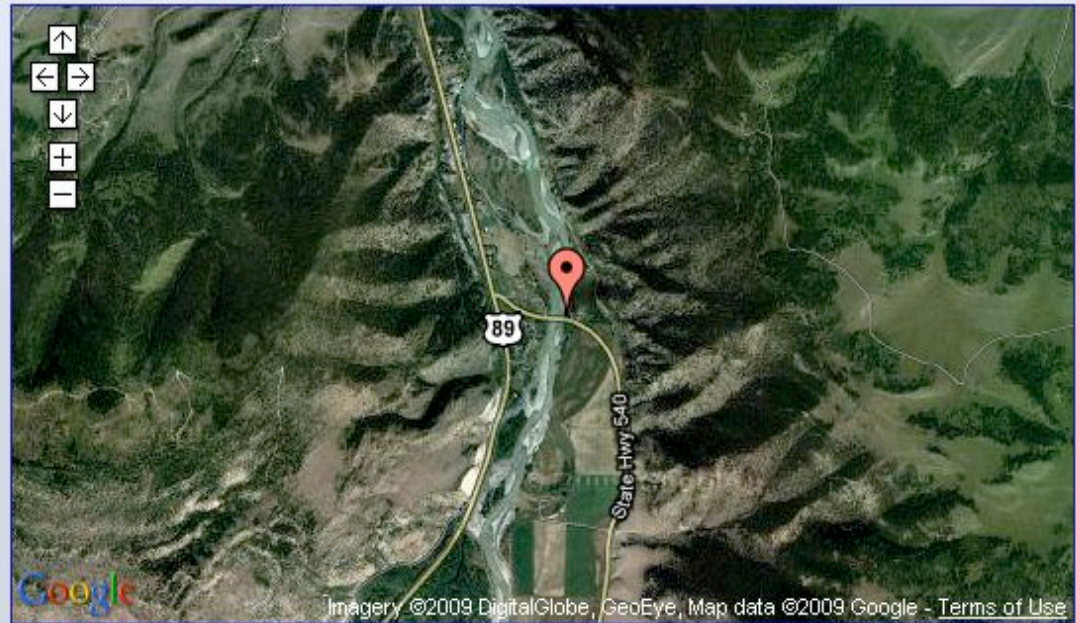
11 Gauges found



Going up: Going down: Steady: Water Data courtesy of [USGS](#)

Gauge being Tracked	Date/Time	Status	Flow (cfs)	Stage (ft)
Yellowstone River Near Livingston Mt	Jan 16, 21:45	Decreasing	1130	2.12
Yellowstone River At Corwin Springs Mt	Jan 16, 22:00	Steady	667	0.82
Boulder Creek At Maxville Mt	Jan 16, 22:00	Crashing	-	1.68
Gallatin River Near Gallatin Gateway Mt	Jan 16, 21:45	Decreasing	289	1.28
East Gallatin R Bl Bridger C Nr Bozeman Mt	Jan 16, 22:30	Increasing	60	2.51
Madison River Bl Ennis Lake Nr Mcallister Mt	Jan 16, 22:45	Increasing	1760	2.86
West Rosebud Creek Near Roscoe Mt	Jan 16, 22:00	Steady	62	0.76
Little Bighorn River Near Hardin Mt	Jan 16, 22:00	Jumping	-	3.61
Clark Fork Above Missoula Mt	Jan 16, 22:00	Increasing	1310	2.69

Coords: 45.59715810,-110.56603940
Altitude: 4542.49 ft
Last Measurement: Jan 16, 21:45
Flow: 1130 cfs
Stage: 2.12 ft
Flow Change: -4.88677%
Stage Change: -2.64718%



Community Average Level Cut-offs

Runnable: 0 cfs
Good Run: 16 cfs
Dangerous Run: 30 cfs

[Log-in to set your levels](#)

A week of graphic history





Username Password [Login](#)
Remember Me ☒ [Forgot your password?](#) | [Sign Up](#)

[Our Organization](#)

[Support AW](#)

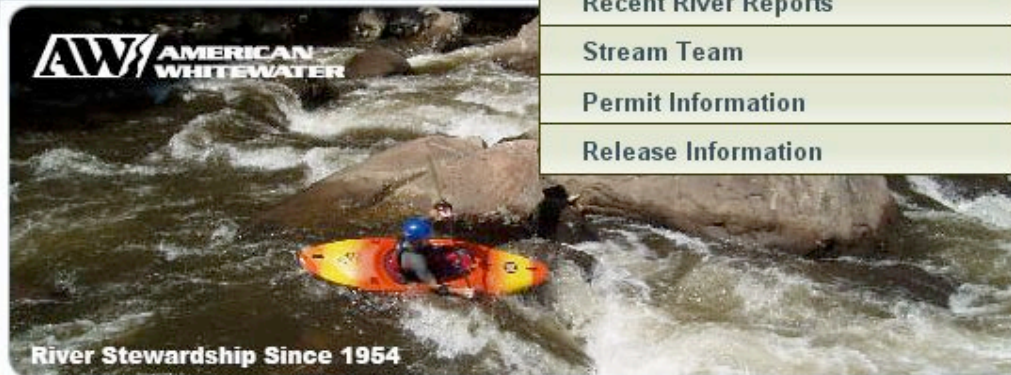
[Community](#)

[River Info](#)

[Library](#)

[Search](#)

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River Stewardship Since 1954

TO CONSERVE AND RESTORE AMERICA'S WHITEWATER RESOURCES AND ENHANCE OPPORTUNITIES TO ENJOY THEM SAFELY.

American Whitewater restores rivers dewatered by hydropower dams, eliminates water degradation, improves public land management and protects public access to rivers for responsible recreational use.

Recent News & Articles

[Pigeon River Water Quality Hearings This Month](#)
[January/February issue of the AW Journal is](#)



AW Successes

[AW Reaches Agreement on Sultan River \(WA\)](#)
[Illabot Creek Wild and Scenic bill passes House](#)
[AW Wins New Belgium Brewing's \\$10,000 Grant!](#)

AW in my Backyard
(click on your region below)



Holiday Membership Offer



AW is supported by membership and partners:



Beaverhead River at Dillon MT [USA-MNT]

[Edit Gauge](#)

Current Conditions

Reading of "n/a" = frozen gauge or gauge error.

Reading	Trend	Type	Updated
253 cfs	0 cfs/hr	Volumetric Flow (CFS)	01h26m
3.69 ft	0.00 ft/hr	Stage in Feet	01h26m

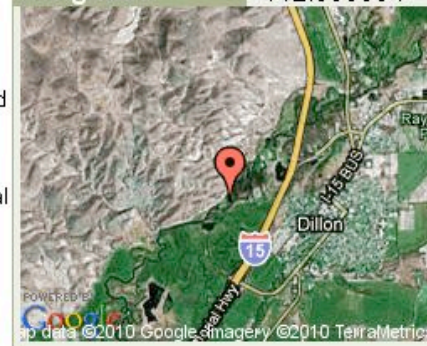


Data courtesy of [USGS](#). Each station record is considered PROVISIONAL until the data are published. Data users are cautioned

to consider carefully the provisional nature of the information before using it for decisions that concern personal or public safety or the conduct of business that involves substantial monetary or operational consequences. [Source Gauge's Page](#)

Station Description

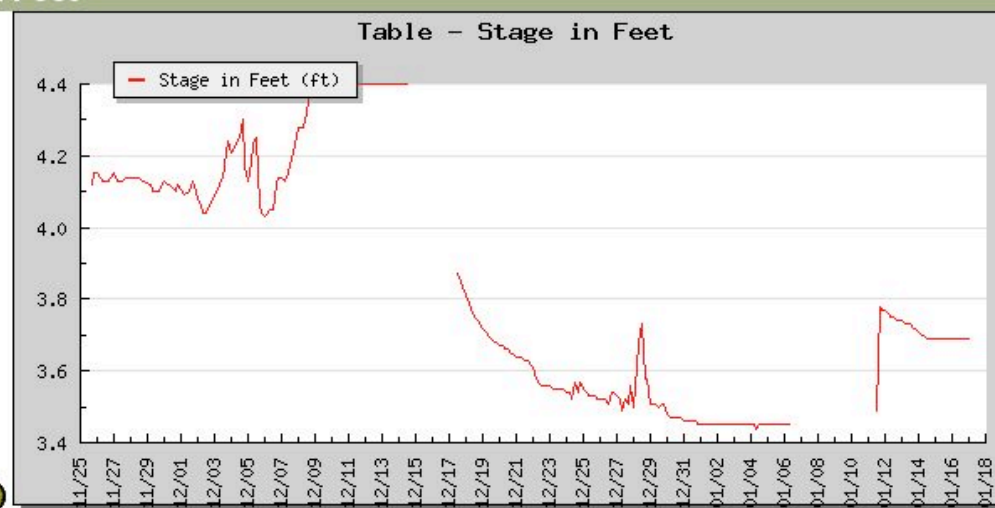
AW Gauge ID:	7222
Source:	usgs
Station:	06017000
Enabled:	yes
HUC:	10020002
Latitude:	45.217977
Longitude:	-112.655854



Information

Stage in Feet Volumetric Flow (CFS) Report - Reports of Related Gauges

Stage in Feet



Disclaimer





River Metertm

Near Real-Time Streamed
River Gauge Information on
Web Sites and RSS Feeds
in just 5 Minutes!



at Robertsville, CT as of 11/18/2009 11:00:00 am Con
Now monitoring the depth of 0 river sites

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River Meters and Gauges

--- SELECT STATE or US TERRITORY ---

< SITE:

Beaverhead River near Twin Bridges MT Montana 06018500

USGS Status: Monitoring Active

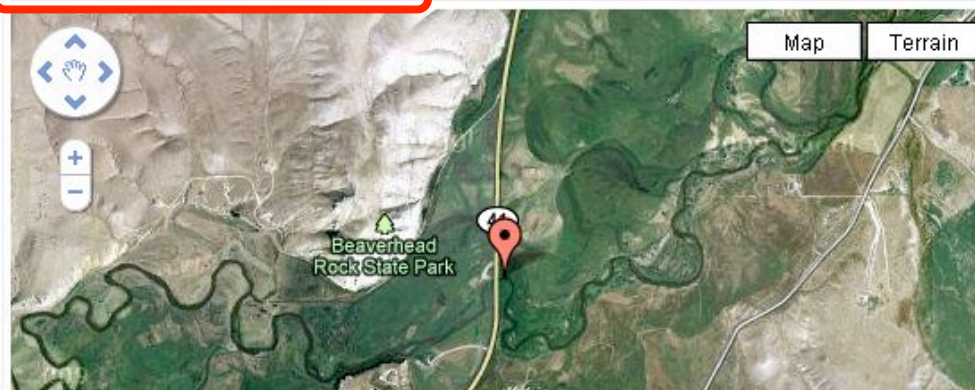
Gauge Height: Unreadable- MST Last Reading: 1/15/2010 11:00 pm

06018500 [View Aerial Map](#) - [06018500 Display Formats](#) - [Demo RSS Feed](#)

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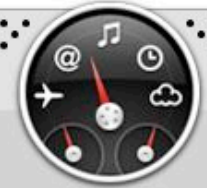
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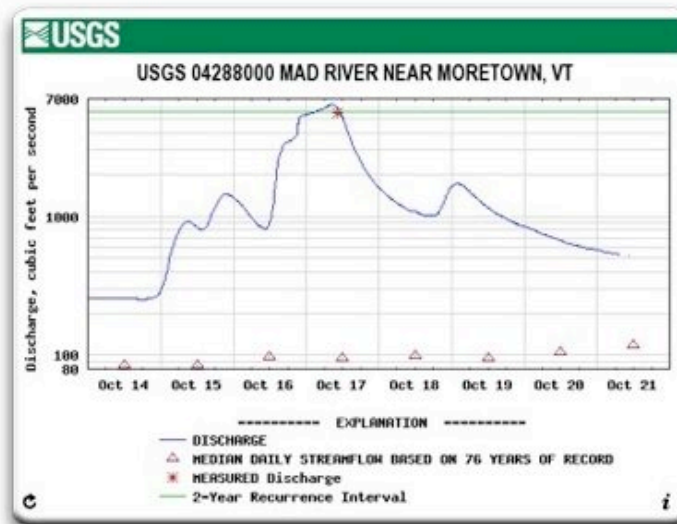
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Dashboard Widgets

Amazing widgets for your Mac OS X Dashboard.

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River Levels



About River Levels

Provides an easy way to monitor the amount of water flowing in your favorite streams and rivers right from your Dashboard. The RiverLevels widget is of particular interest to whitewater kayakers and canoeists.

Once any United States Geological Survey (USGS) stream-gauge station is selected, it is automatically refreshed to always provide you with the latest graph of the water-level in either CFS or feet.

[Download](#) 373K

Download Details

Company: [Adam Franco](#)

Version: **1.2.1**

Post Date: **February 7, 2008**

License: **Freeware**

File Size: **373K**

URL Type: **Download**

Download ID: **8591**



System Requirements

Mac OS X 10.4 or later

Select a category...



Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://waterdata.usgs.gov/nwis/uv?site_no=06018500&PARAMeter_cd=00060&format=rdb

http://waterdata...00060&format=rdb

```
# ----- WARNING -----
# The data you have obtained from this automated U.S. Geological Survey database
# have not received Director's approval and as such are provisional and subject to
# revision. The data are released on the condition that neither the USGS nor the
# United States Government may be held liable for any damages resulting from its use.
# Additional info: http://waterdata.usgs.gov/nwis/help/?provisional
#
# File-format description: http://waterdata.usgs.gov/nwis/?tab_delimited_format_info
# Automated-retrieval info: http://waterdata.usgs.gov/nwis/?automated_retrieval_info
#
# Contact: gs-w_support_nwisweb@usgs.gov
# retrieved: 2010-01-17 00:01:13 EST
#
# Data for the following site(s) are contained in this file
# USGS 06018500 Beaverhead River near Twin Bridges MT
# -----
#
# Data provided for site 06018500
# DD parameter Description
# 02 00065 Gage height, feet
# 05 00060 Discharge, cubic feet per second
#
agency_cd site_no datetime tz_cd 05_00060 05_00060_cd
5s 15s 16d 6s 14n 10s
USGS 06018500 2010-01-16 12:15 MST 382
USGS 06018500 2010-01-16 12:30 MST 382
USGS 06018500 2010-01-16 12:45 MST 382
USGS 06018500 2010-01-16 13:00 MST 382
USGS 06018500 2010-01-16 13:15 MST 382
```



[http://waterservices.usgs.gov/WOF/InstantaneousValues?](http://waterservices.usgs.gov/WOF/InstantaneousValues?location=06018500&variable=00060&period=P1D)

[location=06018500&variable=00060&period=P1D](http://waterservices.usgs.gov/WOF/InstantaneousValues?location=06018500&variable=00060&period=P1D)

```
- <timeSeriesResponse xsi:schemaLocation="http://www.cuahsi.org/waterML/1.0/ http://waterservices.usgs.gov/
+ <queryInfo></queryInfo>
- <timeSeries name="NWIS Time Series Instantaneous Values">
  - <sourceInfo xsi:type="SiteInfoType">
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    <siteCode agencyCode="USGS" siteID="64912" network="NWIS">06018500</siteCode>
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    - <geogLocation xsi:type="LatLonPointType" srs="EPSG:4326">
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    </geogLocation>
  </geoLocation>
</sourceInfo>
- <variable>
  <variableCode vocabulary="NWISUV">00060</variableCode>
  <variableName>Discharge</variableName>
  <variableDescription>Discharge, cubic feet per second</variableDescription>
  <dataType>Instantaneous</dataType>
  <units unitsType="Flow" unitsAbbreviation="cfs"/>
  <NoDataValue>-999999</NoDataValue>
</variable>
- <values count="92">
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  <value dateTime="2010-01-16T00:30:00.000-07:00" qualifiers="P">382</value>
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```





CUAHSI HIS

Sharing hydrologic data

Google™ Custom Search Search HIS

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Messages from the Director

Using Data

Publishing Data

Developing New Components

Project

System

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Other HIS Sites

The **CUAHSI Hydrologic Information System (CUAHSI-HIS)** provides web services, tools, standards and procedures that enhance access to more and better data for hydrologic analysis. Click on the links below to access the various tools directly, or follow the side menu to learn about the CUAHSI-HIS system in more detail, as well as the research being conducted to advance Hydrologic Information Science and serve the community interested in sharing hydrologic data.

Data and Tools

Data Discovery

HydroSeek • HIS Central DASH
CUAHSI Water Data Services

Data Access

WaterML Web Services • HydroExcel
HydroGET • HydroLink
FetchWaterML • HydroObjects

Data Publication

HIS Server
ODM Databases • ODM Tools
Data Loader • Streaming Data Loader
Master CV Registry • HydroTagger
CUAHSI Water Data Services

What's New



Give HydroDesktop a Workout

A testing version of HydroDesktop, CUAHSI HIS' new map-based client application for discovery, access and analysis of hydrologic data is ready for your input. We are looking for members of the community to help us review it and provide feedback. We encourage you to go to the [HydroDesktop website](#), download the software and give it a workout. Let us know your thoughts about it using our [feedback page](#). For more information, see the [HydroDesktop page](#) on this site.



CUAHSI HIS 2009 Status Report Released

The CUAHSI HIS Team has produced a [2009 Status Report](#) that details the expansions and updates to the HIS System that have occurred since the [Version 1.1 Overview Report](#) was released on July 12, 2008. Let us know your thoughts about it using our [feedback page](#).

EarthSky on HIS

Listen to this 90 second EarthSky interview with David Maidment on how HIS is helping experts access water information! [\[More Info\]](#)



Intro to HIS CD Movie

CUAHSI Hydrologic Information
System

Presented by Tim Whiteaker



National Water Information System: Mapper

Include: Zoom to: or [NWIS Home](#) | [Instructions](#) | [Disclaimer](#)

Status:

Click a site to access its data.
(Current zoom level is 11.)

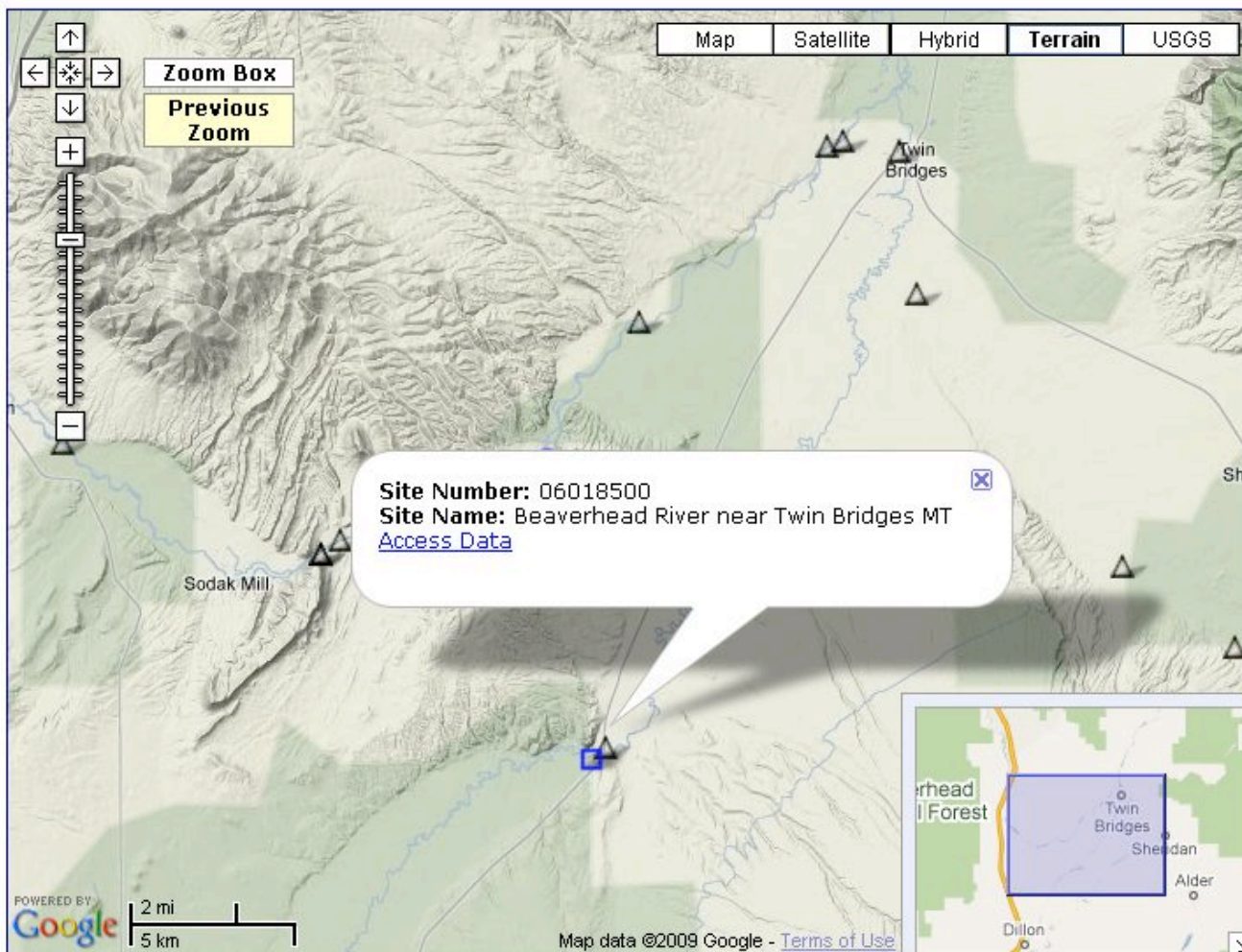
- ☒ **Surface-Water Sites**
(streams, lakes, wetlands, estuaries,
ocean, diversions, outfalls)
- ☐ Any data
- ☒ Multiple surface-water sites

- ☐ **Groundwater Sites**
(wells, any subsurface)

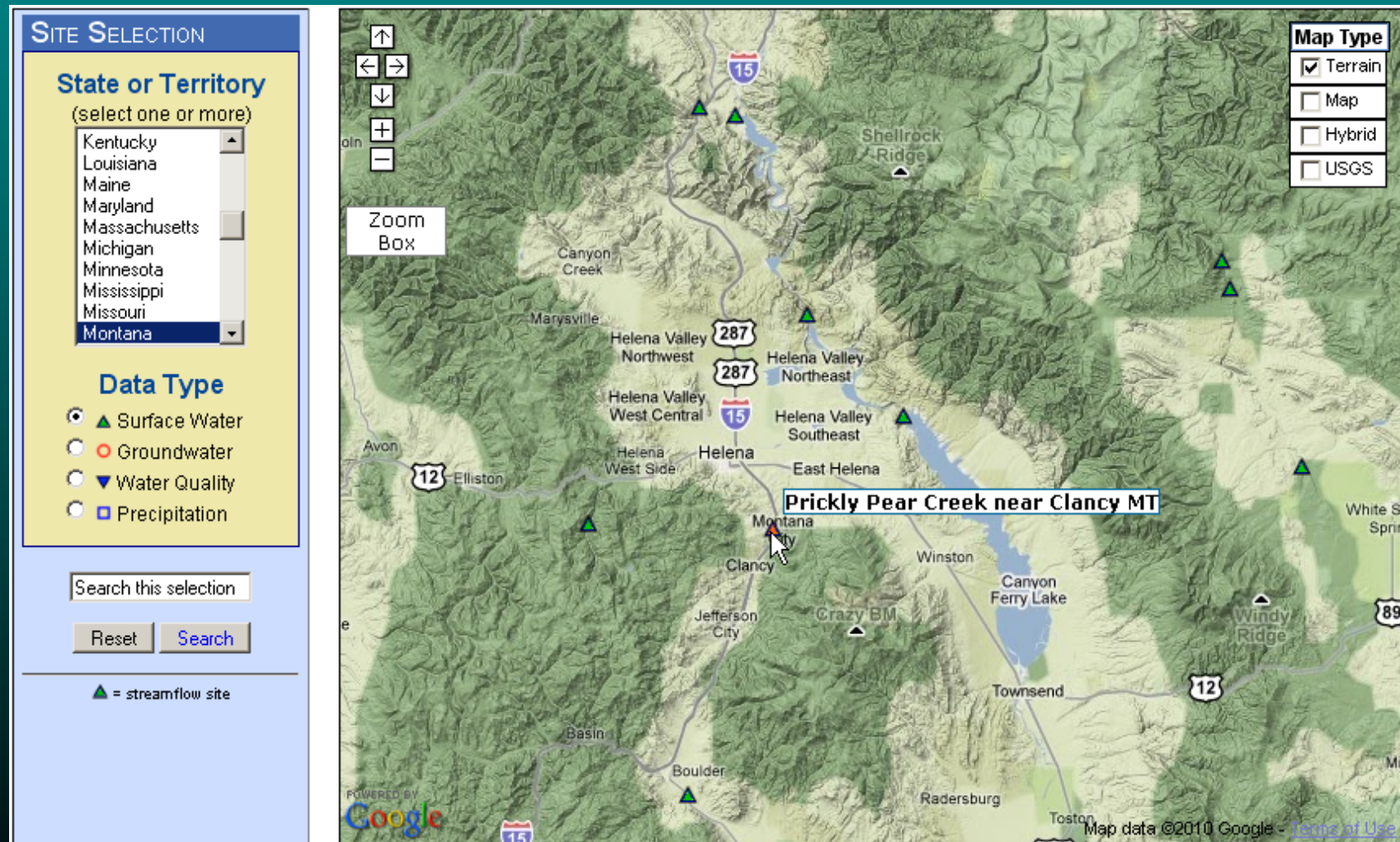
- ☒ **Spring Sites**
- ☐ Any data
- ☒ Multiple spring sites

- ☒ **Atmospheric Sites**
(climate, weather)
- ☐ Any data
- ☒ Multiple atmospheric sites

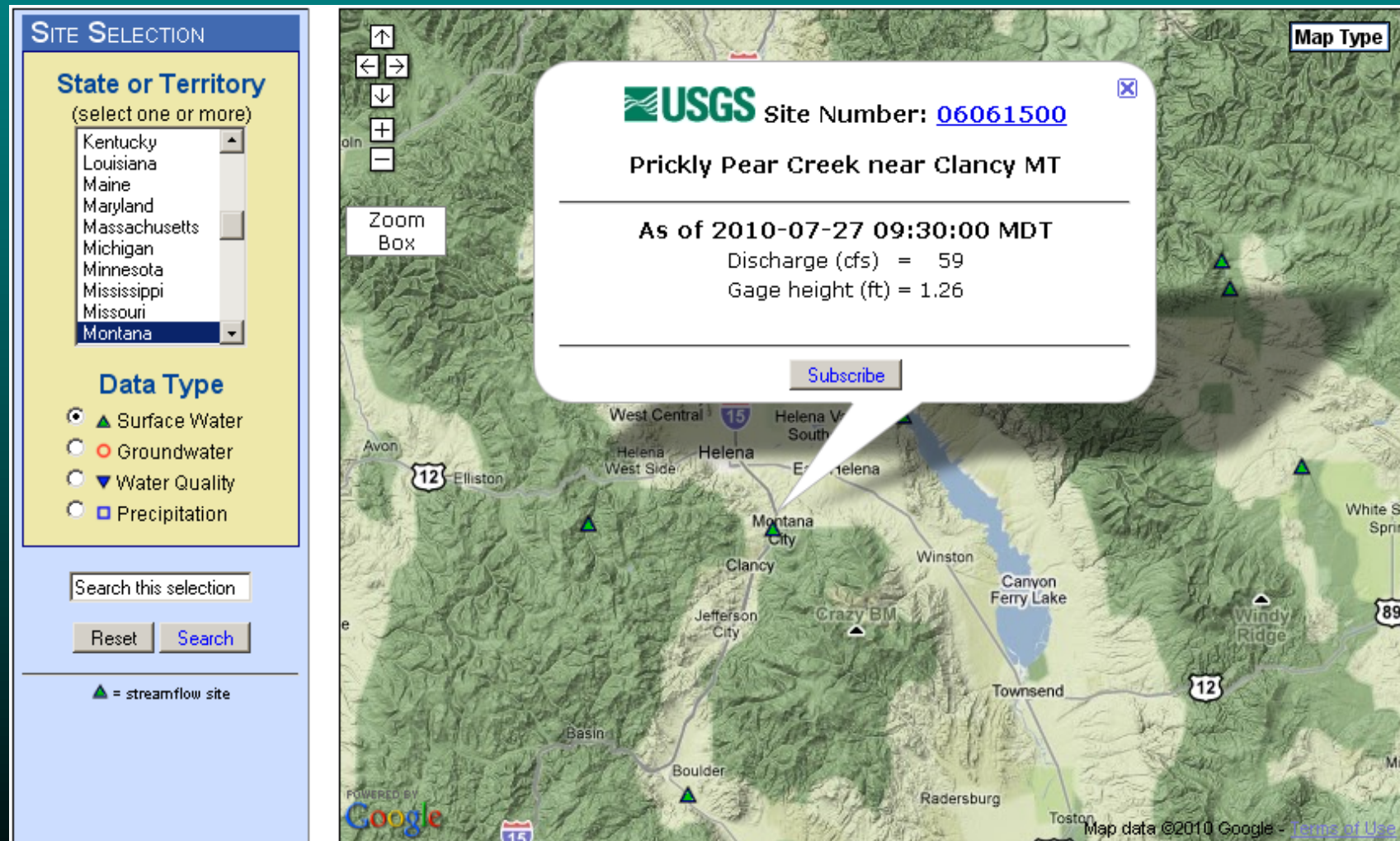
- ☐ **Other Sites**
(facilities, water use, any other)





USGS WaterAlert: <http://water.usgs.gov/wateralert/>



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[Ver: 0.1.3-beta]

Site Number: 06061500
Site Name: Prickly Pear Creek near Clancy MT
Agency: USGS
Transaction ID: KdhC6

Send Notification To: [about this...](#)

☒ My email address
☐ My mobile phone

Notification Frequency: [about this...](#)

Hourly ☐
Daily ☒

Streamflow Parameter:	about this...	Recent value:
Discharge (cfs)	<input type="radio"/>	59
Gage height (ft)	<input checked="" type="radio"/>	1.26

Threshold Condition: [about this...](#)

☒ Greater than (>)
☐ Less than (<)
☐ Outside a range (< or >)
☐ Inside a range (> and <)

Real-time value is greater than: ft

☐ I have read and acknowledge the [Provisional Data Statement](#) and [Disclaimer](#).



slide 56

Questions?

<http://waterdata.usgs.gov/>

dbriar@usgs.gov

